



1995

## *EMI Filters*



ISO-9002

John Griffith  
Sales Engineer



**Northeast**

**NORTHEAST REPRESENTATIVES, INC.**  
62 Derby Street, Hingham, MA 02043  
CT 203-866-6030 FAX 860 704-0334  
MA 617 749-8700 FAX 617 749-9646  
E-mail: [support@northeastrep.com](mailto:support@northeastrep.com)





# DELTA

## QUALITY MAKES THE DIFFERENCE

IECQ APPROVED FILE NO.: M0041 (FACTORY EMI FILTERS)

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# DELTA EMI FILTE

CURRENT RATING (AMPS)													
01	02	03	04	05	06	08	10	15	20	30	40	50	60
									○	○			○
							○		○	○	○	○	
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		○			○		○						
		○		○									

3-PHASE  
FILTER

TY

TD

WITH IEC  
CONNECTOR

DE

GE

KE

SE

DK

DR

SK

DP





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## DELTA EMI FILTER SELECTOR CHART

YOUR NEED IS?

[illegible]



# R SELECTOR CHART

YOUR NEED IS?

FLANGE MOUNTING	FUSED CONNECTOR	MEDICAL EQUIPMENT	PC BOARD MOUNTING	POWER ENTRY MODULE	SNAP-IN IEC CONNECTOR
					DEN
					GEN
VB					
DB					
DK					
DR					
	BE				
		EK(M)			
		DE(M)			
		DH			
			ME		
			MK		
				LE	
				AK	
				AR	
				EB	
				EK	
				CK	
				CR	
				BR	

## FEATURES AND BENEFITS FOR THE OEM USER

### 1) UL, CSA, VDE/TUV, SEV, SEMKO, DEMKO

#### AND SETI Safety Standards

All Delta filters are designed to meet UL standard 1283, CSA standards C22.2 No. 0, No. 8, and VDE STANDARD 0565 PARTS 1, 2 and 3, including conformity to temperature range HPF (-25°C to +85°C) and full current rating usage at both 115 VAC and 250 VAC. All filters in this catalog are UL recognized and CSA certified, and over 300 types are VDE approved under the following file numbers:

UL file no. E79109

CSA file no. LR48852C

VDE file no. 11641-4730

Additionally, the DE, GE & ME series are SEV SEMKO, NEMKO, DEMKO AND FEMKO approved

### 2) FCC and VDE Emission Compliance

Delta offers a wide range of filter characteristics, both in standard and custom form, to help you meet all applicable FCC, VDE and VCCI conducted emission standards, including FCC, VDE and VCCI class B requirements.

### 3) Construction and Design

- Toroid cover for perfect insulation, with built-in spacers to maintain creepage distance between windings. (see Fig. 1 ①)
- Precision balance of inductance between windings to prevent core saturation at full load. ②
- Only capacitors that comply with VDE 0565-1 are used. ③
- Low leakage current. ④
- Both crimped and soldered connections. ⑤
- Anti-rotation terminals to prevent open connections. ⑥
- Corrosion-proof case. ⑦

### 4) Quality Control

- 100% tested for Hipot, leakage current and insertion loss.
- Less than 200 parts-per-million (ppm) defect rate.
- Approved for Ship-to-Stock program (no incoming inspection) at major computer manufacturers' facilities.

### 5) Availability

Standard items are maintained in stock in Northern California for immediate shipment to OEM customers and distributors throughout North America.

### 6) Price

Delta filters are very competitively priced due to mass production techniques and cost-saving designs.

### 7) Custom Design and Testing Services

Delta has engineering labs and shield rooms in Taipei and Northern California. These facilities allow us to design and fabricate custom filters to meet special requirements not met by standard filters' and to test customers' equipment for compliance with FCC and VDE and VCCI conducted emission requirements. (see Fig. 2)

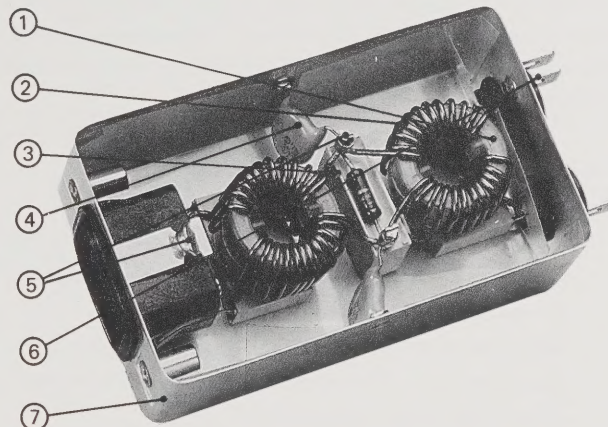


FIG. 1

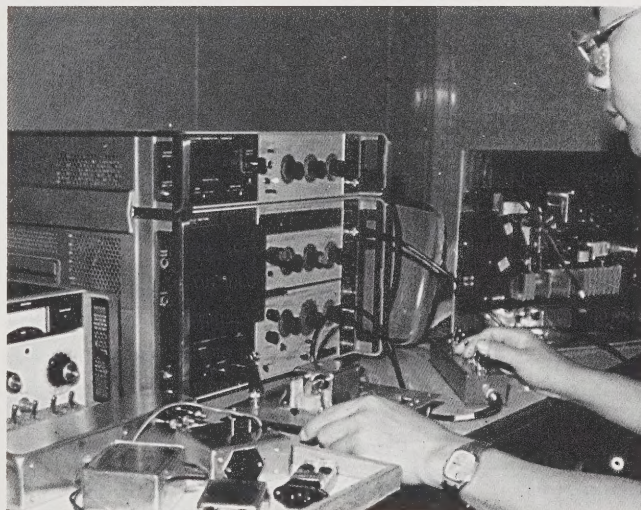


FIG. 2



# DELTA STRENGTH AND CAPABILITY IN EMI / RFI FILTERS

## TECHNOLOGY & TECHNICAL SERVICE

Delta started its EMI/RFI filters business in 1981 and has been the leading manufacturer in the worldwide market ever since.

Based on the long experience in product design and manufacturing, Delta has the most professional technical expertise in EMI/RFI filters. Our design engineers fully understand your EMI/RFI problem and its solution, whatever your application may be.

With Delta's expertise and advanced test facilities for Electro-Magnetic Compatibility (EMC), including shielded room and anechoic chamber, we are able to design EMI/RFI filters that fully meet international regulations. Delta has extensive experience in international safety standards and our self-test capability is recognized by the CSA CCP program. All models of our EMI/RFI filters are internationally safety approved. In addition, our sales and service operations are located globally to provide you effective technical and business services.

## QUALITY

Delta has a strong commitment to providing quality and reliability that meet customers full satisfaction. Our EMI/RFI filters undergo stringent quality review and reliability tests at the design stage.

Statistical Process Controls are used in each and every manufacturing process to ensure the products fully comply with quality requirements.

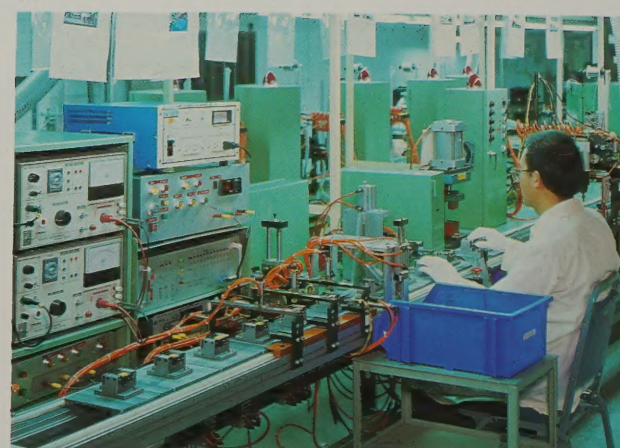
Based on our outstanding performance in quality and reliability, we have received vendor awards from IBM, HP, DEC, Rockwell, Epson, NCR, Xerox and many other major customers. We are also the Ship-to-Stock and Just-In-Time supplier to DEC on EMI/RFI filters. Delta is an ISO-9002 certified manufacturer and our EMI/RFI filter Plant has been qualified under the IECQ system.



## MANUFACTURING

Delta's manufacturing facilities for EMI/RFI filters are highly automated. Within our capable automation-engineering department, we have built state-of-the-art automatic equipment in-house. This includes automated winding, assembly and test systems. In addition, we are most experienced in designing products that best fit automated manufacturing for mass production. This automated manufacturing process greatly increases our production capacity, reduces labor cost and maintains consistent quality.

Delta has worldwide manufacturing bases of EMI/RFI filters in Taiwan and Thailand. The global operation provides more localized and responsive service to our customers. It also allows our customers to receive GSP preference for products made in Thailand.



## PRODUCT OFFERING AND DISTRIBUTION SERVICE

Delta has over 450 standard part numbers, all UL recognized, CSA (under the CCP program) certified and VDE approved. Many models are also approved by Nordic agencies and SEV. We have sales offices and distributors in the U.S., Taiwan, Hong Kong, Israel, Japan, Singapore, Australia, and many European countries. This enables us to maintain stock worldwide for prompt delivery to our customers, regardless of their location around the globe. In addition, Delta can provide custom design service to meet applications such as three-phase-filters used in military products. Our products may be customized to meet specific customer requirements, including P.C. Board mounting types, power entry module filters, cost effective IEC connector filters and others. With our engineering capability, Delta continues to apply its new technology to bring about products of better value and performance to enhance our customers' end-products.





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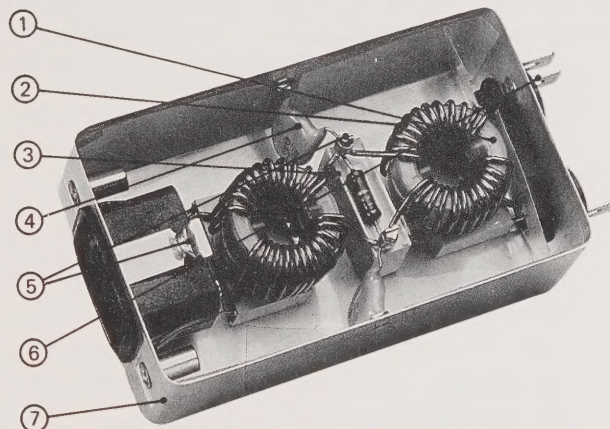


FIG. 1

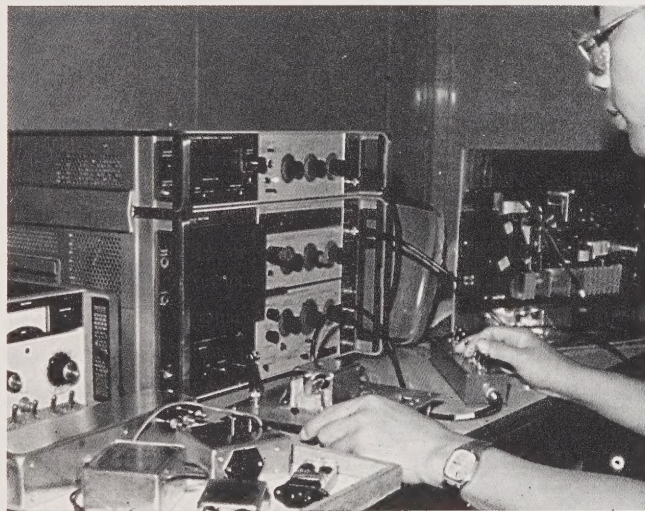


FIG. 2



## BRIEF CONCEPT OF EMI FILTER

### EMI NOISE-ORIGIN AND CHARACTERISTICS

Recent decades have witnessed the rapid growth of computers, business machines, industrial controls, medical electronic equipment and many other devices that utilize digital techniques. Concurrent with this growth, the problems of Electro-Magnetic Interference (EMI) both into the equipment, causing equipment malfunction, and out of the equipment, causing interference to other equipment of RE communication, have become more severe. The frequency range of EMI noise are 10KHz to 30MHz by conduction through wires and 30MHz to 1GHz by radiation.

Conducted EMI noise consists of two modes:

1. Common mode interference is EMI noise present on the line and neutral referenced to safety ground. Most noise problems are caused by common mode interference.
2. Differential mode interference is EMI noise present on the phase line referenced to the neutral. Differential mode EMI tends to decline rapidly in the building wiring.

### LEGAL REGULATION ON CONDUCTED EMI FCC

In the US the FCC has imposed legal regulations to control interference at its source. All computing devices, including peripherals, using digital techniques with a clock frequency greater than 10KHz must comply with FCC regulations part 15 since Oct. 1983. The FCC has divided products into two basic categories:

#### Class A:

For computing devices marketed for use in a commercial, industrial or business environment. Class A requires verification which means that the equipment has been tested and comply, but the manufacturer retains the test data.

#### Class B:

For computing devices marketed for use in a residential environment. Class B requires certification which means that the test data has to be submitted to FCC for equipment approval. The commission may request a sample of the equipment for testing at the FCC laboratory.

### VDE

Products intended for European markets should meet the requirements devised by VDE. VDE 0243 specification limits conducted emission for computing devices and other industrial, scientific and medical equipment to two levels:

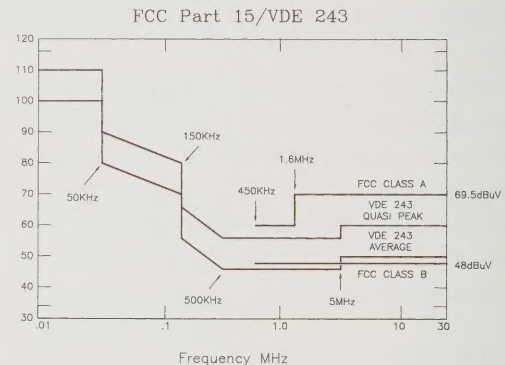
#### Class A:

The user has to apply for a special operating license issued by the BZT (the German equivalent of FCC). If the equipment is moved from one location to another, the BZT must be notified.

#### Class B:

If the equipment meets the B level, it then has general approval and no operating license is required. Most manufacturers attempt to meet Class B for marketing reasons.

Conducted EMI regulated by FCC part 15 and VDE 243 are shown in the figure below:



### ADEQUATE SELECTION OF EMI FILTER

The effectiveness of noise attenuation is undoubtedly the primary concern for selecting an EMI filter. The capability in this aspect usually refers to the reading of insertion loss which is derived from following formula:

$$\text{Insertion loss (dB)} = 20 \log \frac{V_1}{V_2}$$

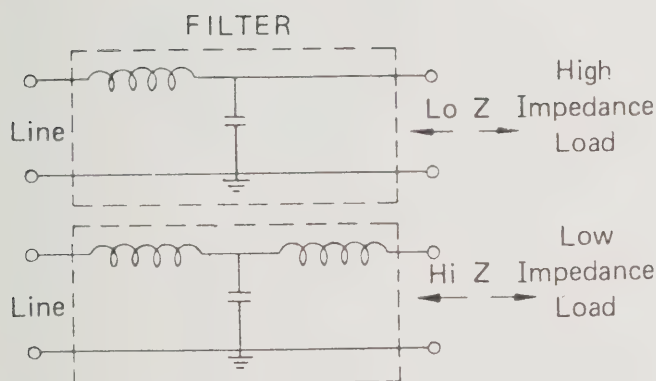
Wherein  $V_1$  = EMI voltage without filter

$V_2$  = EMI voltage with filter



Published insertion loss data assumes that power line and load have the same impedance and all such data are in practice generated from a 50 OHM 50 OHM circuit. However, the said condition seldom exists in actual application. Therefore, insertion loss readings are not supposed to represent actual performance of noise suppression but a reference for comparison among different units or evaluation of product conformity in incoming inspection. To verify actual effectiveness in noise suppression, a filter has to be mounted in the equipment for conducted emission test in a shield room.

The effectiveness of noise attenuation depends heavily on source and load impedance. EMI filters function as "mismatching networks" between source and load impedance at high frequencies. The greater the mismatch, the more effective the filter will be in attenuating the interference. In most cases, the power line presents a low impedance. The filter line side should then present a high impedance. High impedance equipment such as linear power supplies should use a filter with low impedance or a shunt capacitor at the load side to get a mismatch. Low impedance equipment such as switching power supplies, synchronous motors or shunt regulators should use a filter with a high impedance at the load side and should have a series inductor. The schematics below provide you an easy way for choosing the appropriate filter.



The following factors should also be taken into consideration in your selection process.

- Current and voltage rating
- Environmental requirements such as temperature, shock, vibration and humidity.
- Physical dimension and terminal configuration.
- Availability
- Cost effectiveness
- Safety approval

## DELTA PART NUMBERING SYSTEMS

### A. MODELS OTHER THAN POWER ENTRY MODULE TYPES AND P.C. BOARD MOUNTING TYPES

03	DE	E	G3H	A
current rating: AC rms e.g. : 03 amp				
series: electrical circuit, see specific catalog pages				
case style: A - small mounting ears 90 degrees from terminal sides B - triangle mounting ears 90 degrees from terminal sides C - triangle mounting ears on terminal sides D - IEC connector with mounting screws E - IEC connector package G - two-hole mounting bars, 90 degrees from terminal sides				
input/output connection: G = lugs; W = PVC wires; S = screws G5 = 5 lugs W5 = 5 wires G3H/G3M = 3 lugs horizontal G3V = 3 lugs vertical W3V = 3 wires vertical (For cylinder types, the 8th digit designates the outside diameter: S- $\phi$ 38mm; M- $\phi$ 43mm; L- $\phi$ 50mm)				
Special Design: A-with ground choke M- Medical Filter (Only For EK, DE Series)				

### B. POWER ENTRY MODULE TYPES

06	AR	2	D
current rating: AC rms e.g. : 06=6amp			
series: see specific catalog pages			
module construction: 1- IEC connector & fuse holder 2- IEC connector, fuse holder and power switch 3- IEC connector, fuse holder, power switch and voltage selector switch 4- IEC connector, fuse holder & voltage selector switch 5- For models other than CK, CR series; same construction as 4 but with voltage selector switch at front panel			
special design: A- with ground choke D- with double pole power switch for models other than CK, CR series			

### C. PCB MOUNTING TYPES

03	ME	1
current rating: AC rms e.g. : 03=3 amp		
series: see specific catalog page		
design sequence		



# **POWER ENTRY MODULE FILTERS**





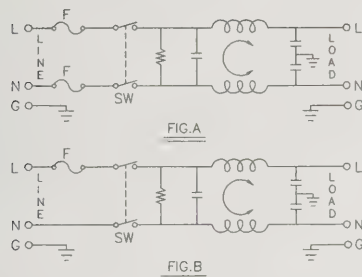
HPF  
565-3



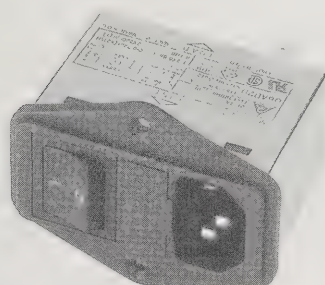
### A. INTRODUCTION

1. Power module incorporates an IEC connector, single or double fuse (IEC 5 × 20MM) holder, and double pole power switch, plus an EMI filter all in one easy-to-install unit.
2. Effectively suppress EMI noise, both line-to-line and line-to-ground, for general applications.
3. Compact design and high volume production provide maximum flexibility and significant savings in space and cost over assembly of individual components.
4. All part numbers are UL recognized and CSA certified (VDE in process).

### C. ELECTRICAL SCHEMATIC



### E. MECHANICAL CONSTRUCTION



### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH line-to-ground @ 115VAC 60Hz: 0.2mA @ 250VAC 50Hz: 0.4mA
2. Hipot rating (one minute)  
line-to-ground : 2250VDC  
line-to-line : 1450VDC
3. Operating frequency: 50-60Hz
4. Rated voltage: 115/250VAC
5. Minimum insertion loss in dB

#### COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	0.05	0.10	0.15	0.50	1.0	5.0	10	30
1A	20	25	30	35	40	40	40	35
3A	10	15	20	25	30	40	40	35
6A	2	5	10	15	20	35	40	35

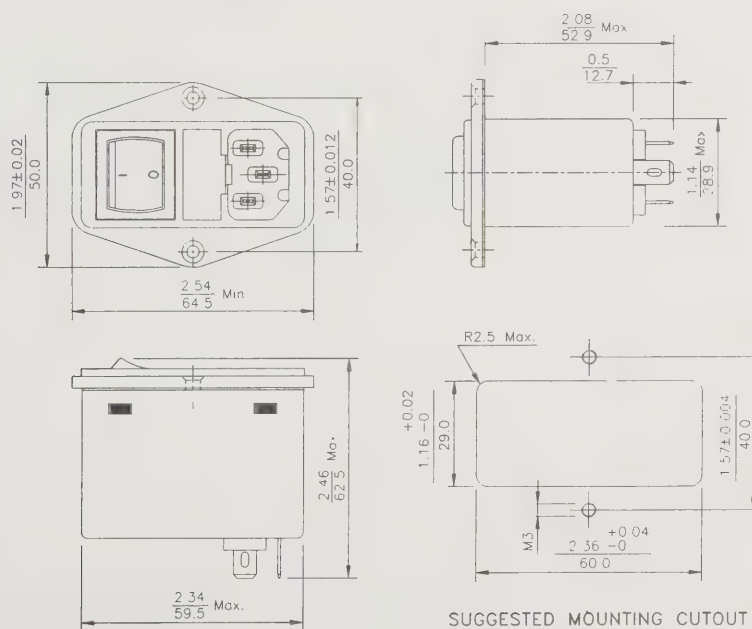
#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

1A	0	4	8	20	30	40	40	35
3A	0	4	7	15	25	40	40	35
6A	0	3	5	15	20	35	40	35

### D. TYPES & RATED CURRENT

DELTA PART NO.		01AB2D	03AB2D	06AB2D	01AB2S	03AB2S	06AB2S
RATED CURRENT	115VAC	1A	3A	6A	1A	3A	6A
	250VAC	1A	3A	4A	1A	3A	4A
IEC CONNECTOR		△	△	△	△	△	△
FUSE		DOUBLE			SINGLE		
* POWER SWITCH		DOUBLE POLE			DOUBLE POLE		
ELECTRICAL SCHEMATIC		FIG. A			FIG. B		

\* UL , CSA , VDE APPROVED, CURRENT RATING: UL/CSA-10A BOTH AT 125VAC AND 250VAC ; VDE-4A/250VAC  
ELECTRICAL LIFETIME: 10000 CYCLES. MAXIMUM INRUSH CURRENT: 51A



SUGGESTED MOUNTING CUTOUT

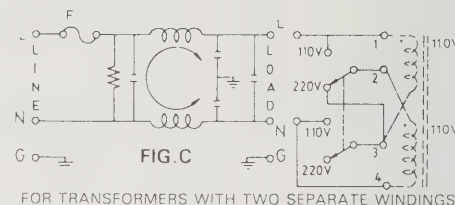
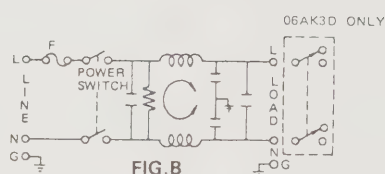
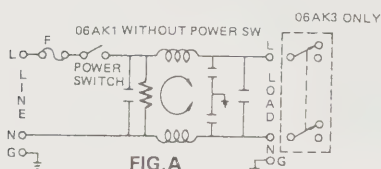
UNIT: INCH  
mm



## A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, A FUSE HOLDER WITH OPTIONAL POWER ON/OFF SWITCH AND VOLTAGE SELECTOR SWITCH PLUS AN EMI FILTER ALL IN ONE SINGLE, EASY TO INSTALL UNIT.
2. DUE TO COMPACT DESIGN AND HIGH VOLUME PRODUCTION, THIS SERIES PRESENTS MAXIMUM FLEXIBILITY, MINIMUM SPACE REQUIREMENT AND COST SAVINGS OVER INDIVIDUAL COMPONENTS WITH NO ASSEMBLY COST.
3. FUSE HOLDER DESIGNED FOR ONE IEC 5x20mm FUSE AND ONE SPARE FUSE. SAFETY INTERLOCK PREVENTS FUSE REMOVAL WITH LINE PLUG INSERTED.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

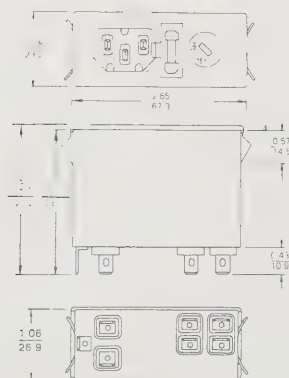
## C. ELECTRICAL SCHEMATIC



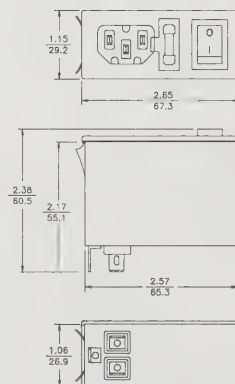
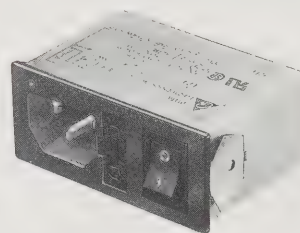
## D. TYPES & RATED CURRENT

DELTA PART NO.		06AK1(P)	06AK2(P)	06AK2D(P)	06AK3(P)	06AK3D(P)	06AK4(P)	06AK5	
RATED CURRENT	115VAC	6A	6A	6A	6A	6A	6A	6A	
	250VAC	6A	6A	4A	5A	4A	5A	6A	
IEC CONNECTOR		△	△	△	△	△	△	△	1 SINGLE POLE UL, CSA & VDE APPROVED CURRENT RATING UL & CSA 6A BOTH AT 125VAC & 250VAC VDE 6A/250VAC ELECTRICAL LIFETIME 50,000 CYCLES MAXIMUM INRUSH CURRENT 24A
FUSE HOLDER		△	△	△	△	△	△	△	
POWER SWITCH		—	SP <sup>1</sup>	DP <sup>2</sup>	SP <sup>1</sup>	DP <sup>2</sup>	—	—	2 DOUBLE POLE UL, CSA & VDE APPROVED CURRENT RATING UL & CSA 6A/125VAC 4A/250VAC VDE 4A/250VAC ELECTRICAL LIFETIME 10,000 CYCLES MAXIMUM INRUSH CURRENT 51A
VOLTAGE SELECTOR SW		—	—	—	REAR <sup>3</sup>	REAR <sup>3</sup>	REAR <sup>3</sup>	FRONT <sup>4</sup>	
ELECTRICAL SCHEMATIC		FIG. A	A	B	A	B	A	C	3 VOLTAGE SELECTOR SW UL, CSA & VDE APPROVED CURRENT RATING 10A/125VAC 5A/250VAC
									4 VOLTAGE SELECTOR SW UL, CSA & VDE APPROVED CURRENT RATING UL & CSA 6A BOTH AT 125VAC & 250VAC VDE 6A/250VAC

## F. MECHANICAL CONSTRUCTION



06AK5



06AK1 (P), 06AK2, 2D (P)  
06AK3, 3D (P), 06AK4 (P)

UNIT: INCH  
mm

THE 'O' MARKING OF SINGLE & DOUBLE POLE POWER ON/OFF SWITCHES ARE REVERSED IN POSITION.

† NON-STANDARD PART NUMBER



### A. INTRODUCTION

1. AR SERIES DESIGNED AS HIGH PERFORMANCE, TWO STAGE FILTER FOR LOW IMPEDANCE LOAD WITH BETTER NOISE ATTENUATION THAN AK SERIES IN LOW FREQUENCY APPLICATIONS SUCH AS SWITCHING POWER SUPPLIES.
2. SAME POWER ENTRY MODULE AS AK SERIES INCORPORATES AN IEC CONNECTOR, A FUSE HOLDER WITH OPTIONAL POWER ON/OFF SWITCH AND VOLTAGE SELECTOR SWITCH PLUS AN EMI FILTER ALL IN ONE SINGLE, EASY TO INSTALL UNIT.
3. FUSE HOLDER DESIGNED FOR ONE IEC 5x20mm FUSE AND ONE SPARE FUSE. SAFETY INTERLOCK PREVENTS FUSE REMOVAL WITH LINE PLUG INSERTED.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA  
@ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

TYPE	FREQUENCY-MHz					
	.10	.15	.50	1.0	5.0	10
06AR	20	34	55	56	40	35
06AR2D, 3D	22	34	60	60	45	40

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

06AR	5	5	25	60	50	45
06AR2D, 3D	5	10	10	50	50	45

### C. ELECTRICAL SCHEMATIC

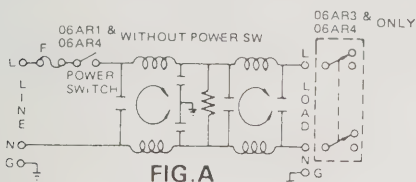


FIG. A

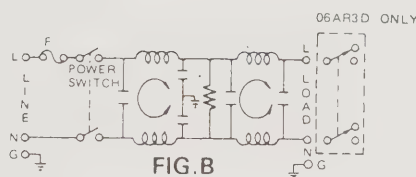


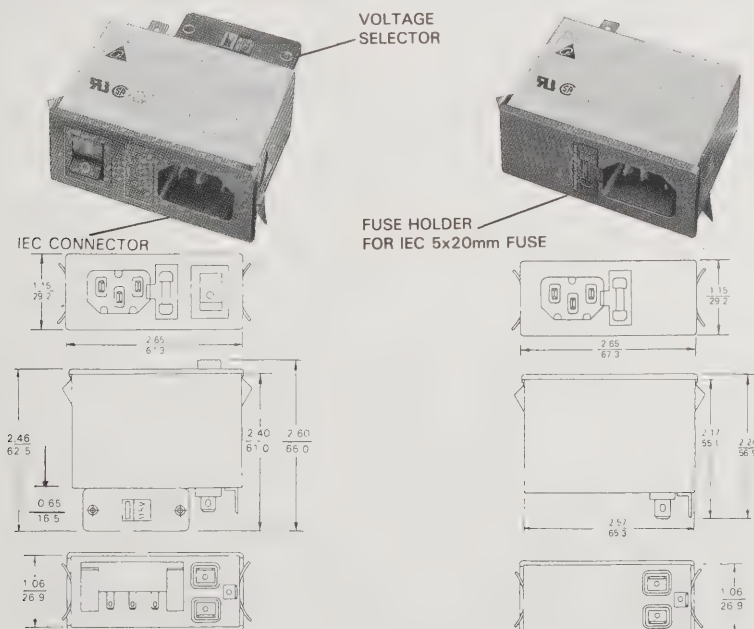
FIG. B

### D. TYPES & RATED CURRENT

DELTA PART NO.	06AR1	06AR2	06AR2D	06AR3	06AR3D	06AR4	
RATED CURRENT	115VAC	6A	6A	6A	6A	6A	1
	250VAC	6A	6A	4A	5A	4A	2
IEC CONNECTOR	△	△	△	△	△	△	3
FUSE HOLDER	△	△	△	△	△	△	
POWER SWITCH	—	SP <sup>1</sup>	DP <sup>2</sup>	SP <sup>1</sup>	DP <sup>2</sup>	—	
VOLTAGE SELECTOR SW	—	—	—	REAR <sup>3</sup>	REAR <sup>3</sup>	REAR <sup>3</sup>	
ELECTRICAL SCHEMATIC	FIG. A	A	B	A	B	A	

1. SINGLE POLE UL, CSA & VDE APPROVED  
CURRENT RATING UL & CSA: 6A BOTH AT 125VAC & 250VAC  
VDE: 6A/250VAC  
ELECTRICAL LIFETIME 50,000 CYCLES  
MAXIMUM INRUSH CURRENT: 24A
2. DOUBLE POLE UL, CSA & VDE APPROVED  
CURRENT RATING UL & CSA: 6A/125VAC 4A/250VAC  
VDE: 4A/250VAC  
ELECTRICAL LIFETIME 10,000 CYCLES  
MAXIMUM INRUSH CURRENT: 51A
3. VOLTAGE SELECTOR SW UL, CSA & VDE APPROVED  
CURRENT RATING 10A/125VAC 5A/250VAC

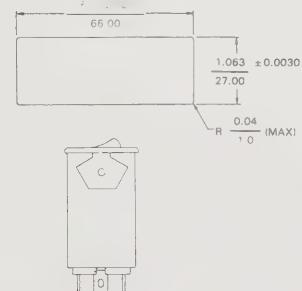
### E. MECHANICAL CONSTRUCTION



06AR3, 06AR3D  
06AR4 (WITHOUT POWER SW)

06AR1

SUGGESTED THICKNESS OF  
MOUNTING PANEL IS FROM 0.04  
TO 0.07 INCH MOUNTING CUTOUT



UNIT: INCH  
mm

THE '0' '1' MARKING OF SINGLE  
& DOUBLE POLE POWER ON/OFF  
SWITCHES ARE REVERSED IN POSITION

† NON-STANDARD PART NUMBER



# CK SERIES

POWER ENTRY MODULE EMI FILTERS



HPF  
0565-3

## A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, DOUBLE FUSE (IEC 5x20MM) HOLDER, OPTIONAL VOLTAGE SELECTOR SWITCH AND DOUBLE POLE POWER SWITCH, PLUS AN EMI FILTER ALL IN ONE EASY-TO-INSTALL UNIT.
2. ADAPTS TO 100-120V OR 200-240V INPUT VOLTAGE SIMPLY BY REVERSING THE FUSE HOLDER.



(fuse holder)

3. EFFECTIVELY SUPPRESS EMI NOISE, BOTH LINE-TO-LINE AND LINE-TO-GROUND, FOR GENERAL APPLICATIONS.
4. COMPACT DESIGN AND HIGH VOLUME PRODUCTION PROVIDE MAXIMUM FLEXIBILITY AND SIGNIFICANT SAVINGS IN SPACE AND COST OVER ASSEMBLY OF INDIVIDUAL COMPONENTS.
5. SEPARATE CIRCUITS FOR EMI FILTER AND VOLTAGE SELECTOR FOR EASY INTEGRATION WITH EQUIPMENT'S BUILT-IN FILTER.
6. PART NUMBERS ENDING IN "A" HAVE SPECIALLY DESIGNED GROUND CHOKES TO PROVIDE VERY EFFECTIVE SUPPRESSION OF HIGH FREQUENCY EMI NOISE.
7. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NO. 51430).

## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE: 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	.10	.15	.50	1.0	5.0	10	30
3A	30	35	40	40	40	40	35
6A	25	30	40	40	40	40	35
10A*	10	15	25	30	40	45	35

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

CURRENT RATING	.10	.15	.50	1.0	5.0	10	30
3A	25	35	55	60	60	40	40
6A	15	25	50	60	50	45	40
10A*	6	6	40	55	50	40	40

\* APPROVED 6A/250VAC IN VDE

## C. ELECTRICAL SCHEMATIC

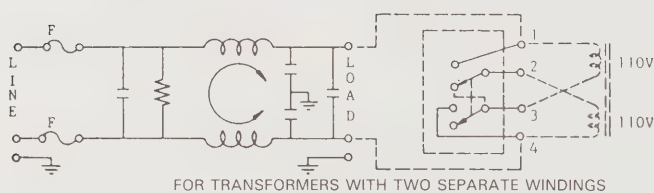


FIG. A

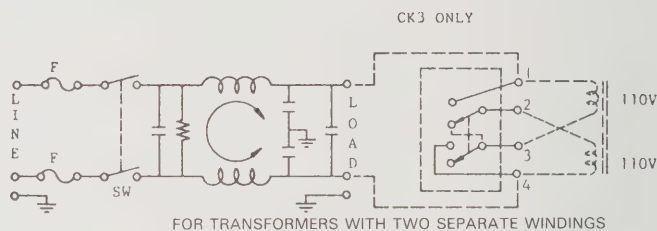


FIG. C

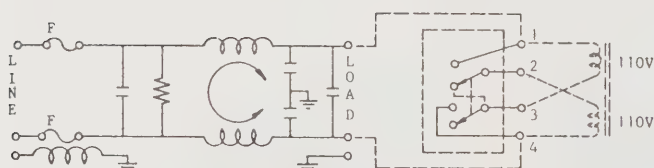


FIG. B

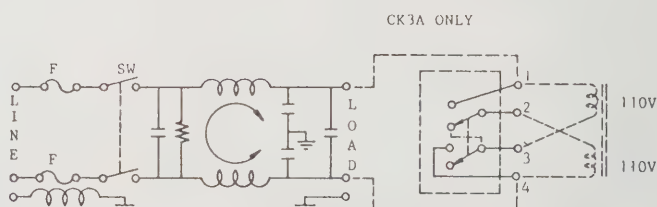


FIG. D

----- INDICATES EXTERNAL WIRING

## D. TYPES AND FEATURES

DELTA PART NO.	03CK2 † 06CK2 † 10CK2	03CK2A † 06CK2A † 10CK2A	03CK3 † 06CK3 † 10CK3	03CK3A † 06CK3A † 10CK3A	03CK4 † 06CK4 † 10CK4	03CK4A † 06CK4A † 10CK4A †
DOUBLE FUSE HOLDER	△	△	△	△	△	△
VOLTAGE SELECTOR SWITCH			△	△	△	△
DOUBLE POLE POWER SWITCH*	△	△	△	△		
IEC CONNECTOR	△	△	△	△	△	△
ELECTRICAL SCHEMATIC	FIG. C	D	C	D	A	B

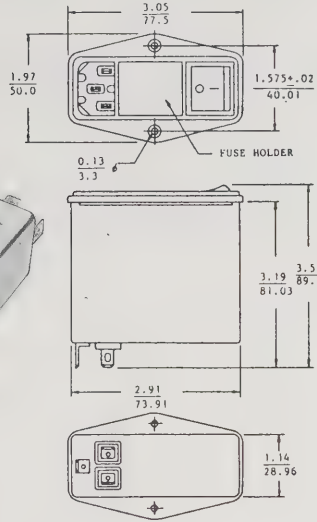
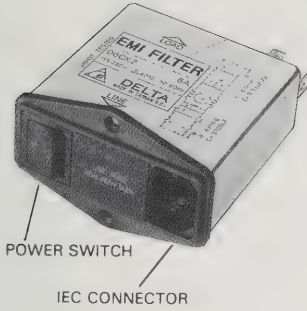
\* UL, CSA, VDE APPROVED, CURRENT RATING: UL/CSA—10A BOTH AT 125VAC AND 250VAC; VDE—10A/250VAC. ELECTRICAL LIFETIME: 10,000 CYCLES. MAXIMUM INRUSH CURRENT: 65A

† NON-STANDARD PART NUMBER

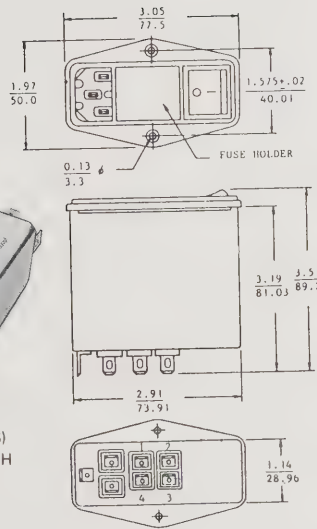
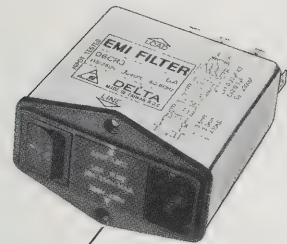


# E. MECHANICAL CONSTRUCTION

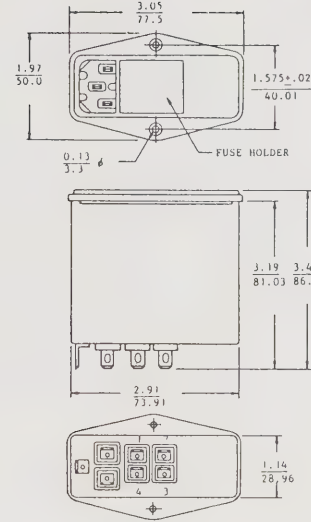
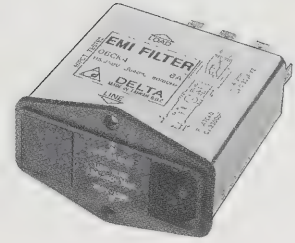
**CK2,  
CK2A**



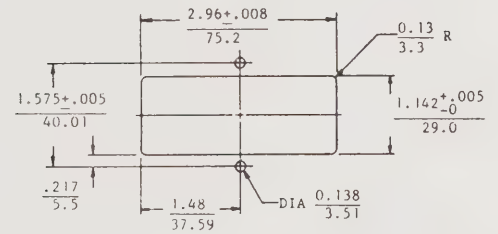
**CK3,  
CK3A**



**CK4,  
CK4A**



**SUGGESTED MOUNTING CUTOUT**



UNIT:  $\frac{\text{INCH}}{\text{mm}}$



### A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, DOUBLE FUSE (IEC 5x20MM) HOLDER, OPTIONAL VOLTAGE SELECTOR SWITCH AND DOUBLE POLE POWER SWITCH, PLUS AN EMI FILTER ALL IN ONE EASY-TO-INSTALL UNIT.
2. ADAPTS TO 100-120V OR 200-240V INPUT VOLTAGE SIMPLY BY REVERSING THE FUSE HOLDER.
3. DOUBLE STAGE DESIGN DELIVERS HIGHER PERFORMANCE ATTENUATION OVER CK SERIES FOR LOW FREQUENCY APPLICATIONS SUCH AS SWITCHING POWER SUPPLIES.
4. COMPACT DESIGN AND HIGH VOLUME PRODUCTION PROVIDE MAXIMUM FLEXIBILITY AND SIGNIFICANT SAVINGS IN SPACE AND COST OVER ASSEMBLY OF INDIVIDUAL COMPONENTS.
5. SEPARATE CIRCUITS FOR EMI FILTER AND VOLTAGE SELECTOR FOR EASY INTEGRATION WITH EQUIPMENT'S BUILT-IN FILTER.
6. PART NUMBERS ENDING IN "A" HAVE SPECIALLY DESIGNED GROUND CHOKES TO PROVIDE VERY EFFECTIVE SUPPRESSION OF HIGH FREQUENCY EMI NOISE.
7. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NO. 51430).



(fuse holder)

### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA  
@ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

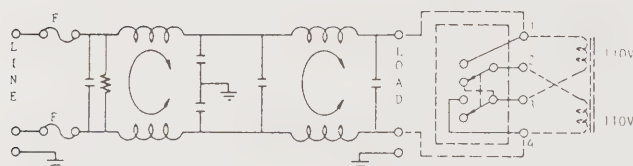
#### COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	.10	.15	.50	1.0	5.0	10	30
3A	45	50	60	55	45	45	32
6A	25	40	55	55	45	40	32

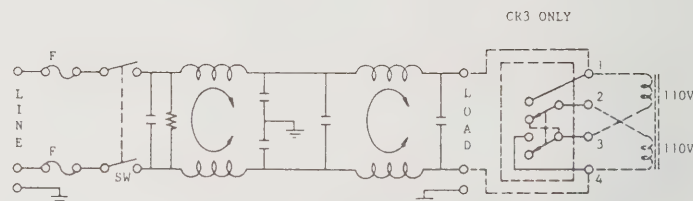
#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

CURRENT RATING	.10	.15	.50	1.0	5.0	10	30
3A	25	30	55	65	65	50	45
6A	6	12	50	60	60	55	45

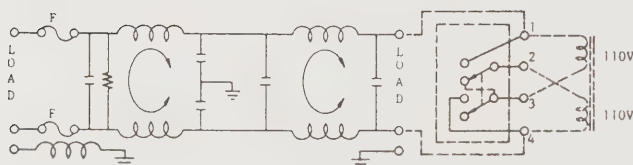
### C. ELECTRICAL SCHEMATIC



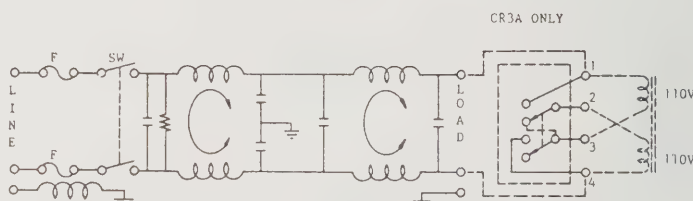
FOR TRANSFORMERS WITH TWO SEPARATE WINDINGS  
**FIG. A**



FOR TRANSFORMERS WITH TWO SEPARATE WINDINGS  
**FIG. C**



FOR TRANSFORMERS WITH TWO SEPARATE WINDINGS  
**FIG. B**



FOR TRANSFORMERS WITH TWO SEPARATE WINDINGS  
**FIG. D**

----- INDICATES EXTERNAL WIRING

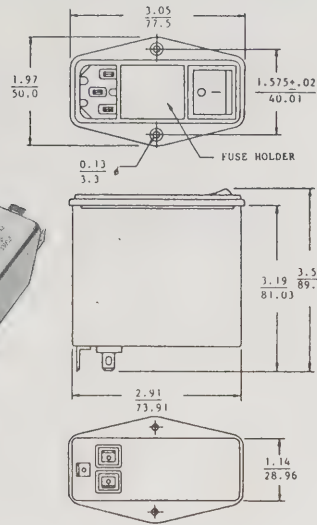
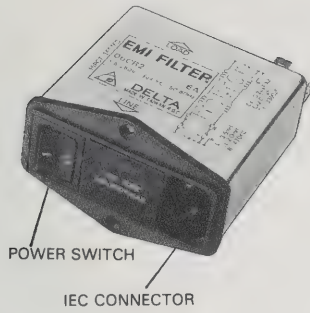
### D. TYPES AND FEATURES

DELTA PART NO.	03CR2 † 06CR2	03CR2A † 06CR2A	03CR3 † 06CR3 †	03CR3A † 06CR3A †	03CR4 † 06CR4 †	03CR4A † 06CR4A †
DOUBLE FUSE HOLDER	Δ	Δ	Δ	Δ	Δ	Δ
VOLTAGE SELECTOR SWITCH			Δ	Δ	Δ	Δ
DOUBLE POLE POWER SWITCH*	Δ	Δ	Δ	Δ		
IEC CONNECTOR	Δ	Δ	Δ	Δ	Δ	Δ
ELECTRICAL SCHEMATIC	FIG. C	D	C	D	A	B

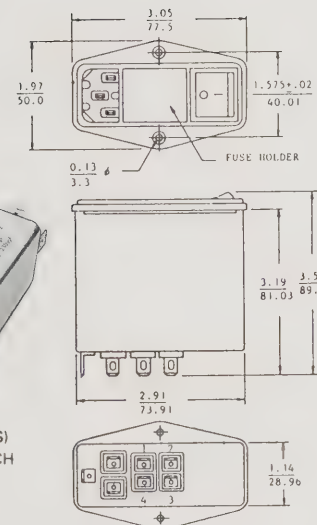
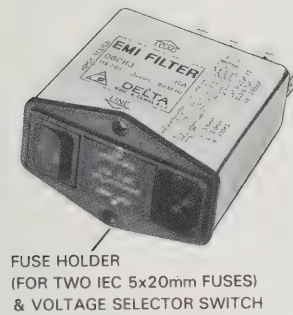
\* UL, CSA, VDE APPROVED, CURRENT RATING: UL/CSA—10A BOTH AT 125VAC AND 250VAC; VDE—10A/250VAC. ELECTRICAL LIFETIME: 10,000 CYCLES. MAXIMUM INRUSH CURRENT: 65A  
ALSO AVAILABLE IN 10 AMP VERSION.

# E. MECHANICAL CONSTRUCTION

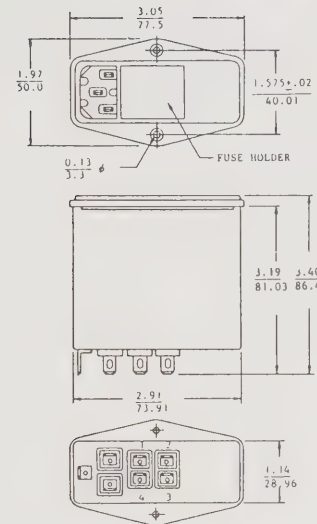
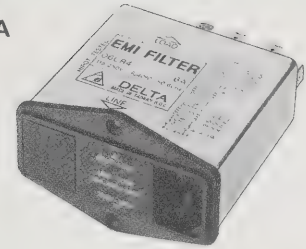
**CR2,  
CR2A**



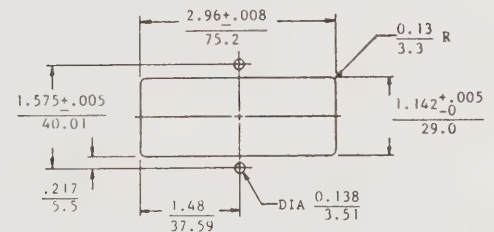
**CR3,  
CR3A**



**CR4,  
CR4A**



**SUGGESTED MOUNTING CUTOUT**



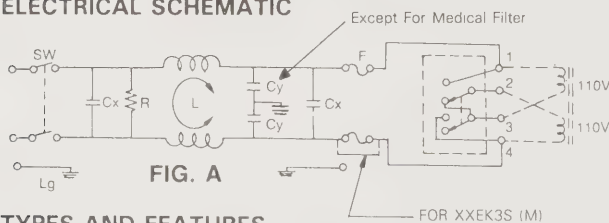
UNIT:  $\frac{\text{INCH}}{\text{mm}}$



### A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, SINGLE OR DOUBLE FUSE (IEC 5×20MM OR 3AG 6.3×32MM) HOLDER, OPTIONAL VOLTAGE SELECTOR SWITCH AND DOUBLE POLE POWER SWITCH, PLUS AN EMI FILTER ALL IN ONE EASY-TO-INSTALL UNIT.
2. ADAPTS TO 110-120V OR 220-240V INPUT VOLTAGE SIMPLY BY REVERSING THE FUSE CARTRIDGE.
3. EFFECTIVELY SUPPRESS EMI NOISE, BOTH LINE-TO-LINE AND LINE-TO-GROUND, WITH BETTER PERFORMANCE OVER EB SERIES FOR LOW FREQUENCY APPLICATION.
4. COMPACT DESIGN AND HIGH VOLUME PRODUCTION PROVIDE MAXIMUM FLEXIBILITY AND SIGNIFICANT SAVINGS IN SPACE AND COST OVER ASSEMBLY OF INDIVIDUAL COMPONENTS.
5. SEPARATE CIRCUITS FOR EMI FILTER AND VOLTAGE SELECTOR FOR EASY INTEGRATION WITH EQUIPMENT'S BUILT-IN FILTER.
6. FEATURES DELTA'S UNIQUE FUSE HOLDER DESIGN TO REDUCE SIZES.
7. PART NUMBERS ENDING IN "A" HAVE SPECIALLY DESIGNED GROUND CHOKE TO PROVIDE VERY EFFECTIVE SUPPRESSION OF HIGH FREQUENCY EMI NOISE. PART NUMBERS ENDING IN "M" ARE MEDICAL FILTER.
8. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

### C. ELECTRICAL SCHEMATIC



### D. TYPES AND FEATURES

DELTA PART NO.	03EK3(M) 06EK3(M) 10EK3(M)	† 03EK3A(M) † 06EK3A(M) † 10EK3A(M)	† 03EK3S(M) † 06EK3S(M) † 10EK3S(M)	† 03EK3SA(M) † 06EK3SA(M) † 10EK3SA(M)	<p>* UL, CSA &amp; VDE APPROVED, CURRENT RATING: UL -10A BOTH AT 125 VAC, &amp; 250VAC, CSA &amp; VDE-6A/250VAC</p> <p>** UL, CSA &amp; VDE APPROVED, CURRENT RATING: UL &amp; CSA 10A BOTH AT 125VAC &amp; 250VAC; VDE-10A/250VAC ELECTRICAL LIFETIME: 10,000 CYCLES. MAXIMUM INRUSH CURRENT: 51A</p>
FUSE *	DOUBLE	DOUBLE	SINGLE	SINGLE	
VOLTAGE SELECTOR SWITCH	△	△	△	△	
DOUBLE POLE POWER SWITCH **	△	△	△	△	
IEC CONNECTOR	△	△	△	△	
ELECTRICAL SCHEMATIC	FIG. A	FIG. B	FIG. A	FIG. B	

### B. SPECIFICATIONS

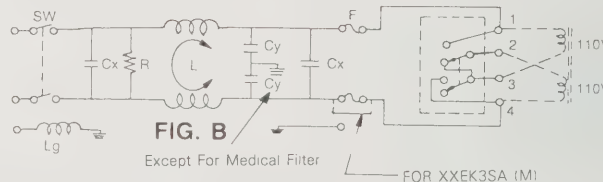
1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA  
(2μA EK3XXM)  
@ 250VAC 50Hz: 0.45mA,  
(5μA EK3XXM)
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60 Hz
4. RATED VOLTAGE: 115-250VAC
5. MINIMUM INSERTION LOSS IN dB  
COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RAINT	FREQUENCY-MHz							
	0.05	0.10	0.15	0.50	1.0	5.0	10	30
3A(M)	24/22	30/27	34/32	38/42	38/36	38/20	38/15	25/6
6A(M)	10/12	15/18	20/20	30/25	35/25	40/20	40/13	30/6
* 10A(M)	10/8	15/10	15/14	25/20	30/25	40/20	40/17	30/10
3A(A,SA)(M)	20/22	25/27	30/32	40/42	40/36	40/22	45/18	25/6
6A(A,SA)(M)	10/12	15/18	20/20	30/25	35/25	40/20	40/13	30/6
* 10A(A,SA)(M)	10/8	15/10	20/14	25/20	30/25	45/20	45/17	30/12

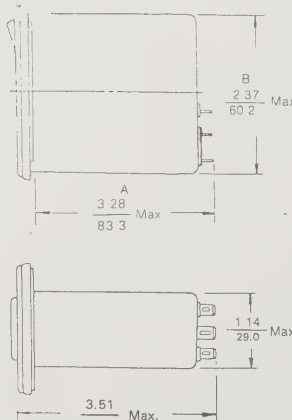
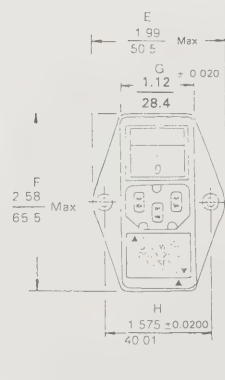
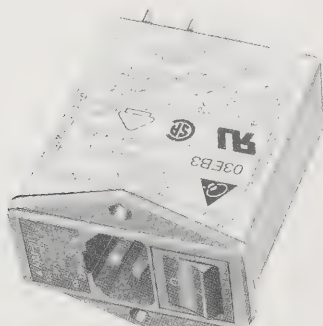
#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

3A(M)	2/2	5/4	20/18	50/48	55/55	40/50	40/50	35/35
6A(M)	2/4	5/4	5/12	40/38	50/50	40/50	40/50	40/25
* 10A(M)	2/4	5/6	3/6	35/30	45/45	40/50	40/50	30/35
3A(A,SA)(M)	1/35	10/35	20/45	50/50	50/55	50/40	45/25	30/10
6A(A,SA)(M)	2/25	3/45	5/25	40/40	50/50	45/40	40/25	40/10
* 10A(A,SA)(M)	2/20	5/28	3/38	35/45	45/50	45/40	40/25	30/13

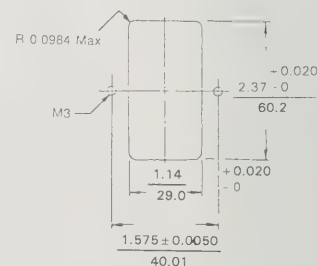
\* CSA APPROVED 6A AT 125/250V AC. VDE-6A/250V AC



### E. MECHANICAL CONSTRUCTION



#### SUGGESTED MOUNTING CUTOUT



UNIT: INCH  
mm

† NON-STANDARD PART NUMBER

### A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, SINGLE OR DOUBLE FUSE (IEC 5×20MM OR 3AG 6.3×32MM) HOLDER, OPTIONAL VOLTAGE SELECTOR SWITCH AND DOUBLE POLE POWER SWITCH, PLUS AN EMI FILTER ALL IN ONE EASY-TO-INSTALL UNIT.
2. ADAPTS TO 110-120V OR 220-240V INPUT VOLTAGE SIMPLY BY REVERSING THE FUSE CARTRIDGE.
3. EFFECTIVELY SUPPRESS EMI NOISE, BOTH LINE-TO-LINE AND LINE-TO-GROUND, FOR GENERAL APPLICATIONS.
4. COMPACT DESIGN AND HIGH VOLUME PRODUCTION PROVIDE MAXIMUM FLEXIBILITY AND SIGNIFICANT SAVINGS IN SPACE AND COST OVER ASSEMBLY OF INDIVIDUAL COMPONENTS.
5. SEPARATE CIRCUITS FOR EMI FILTER AND VOLTAGE SELECTOR FOR EASY INTEGRATION WITH EQUIPMENT'S BUILT-IN FILTER.
6. FEATURES DELTA'S UNIQUE FUSE HOLDER DESIGN TO REDUCE SIZES.
7. PART NUMBERS ENDING IN "A" HAVE SPECIALLY DESIGNED GROUND CHOKE TO PROVIDE VERY EFFECTIVE SUPPRESSION OF HIGH FREQUENCY EMI NOISE.
8. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED. VDE APPROVED

### C. ELECTRICAL SCHEMATIC

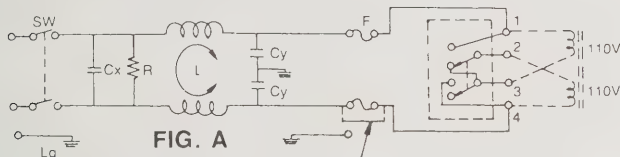


FIG. A

FOR XXEB3S

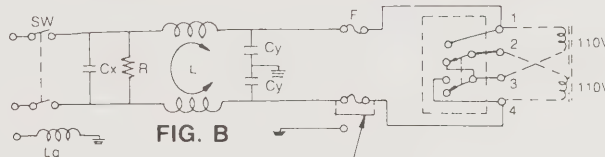


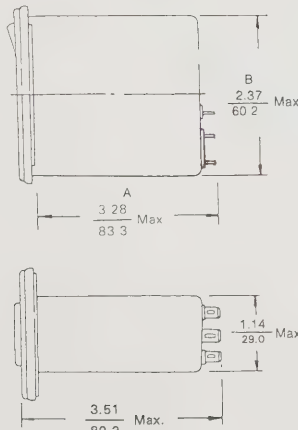
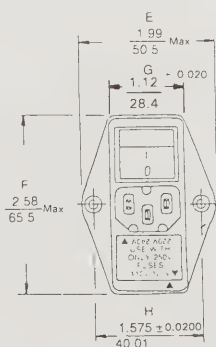
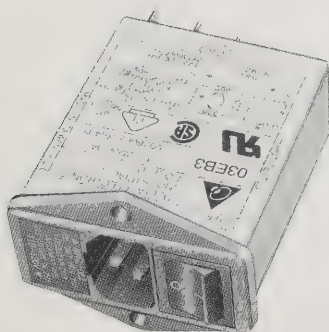
FIG. B

FOR XXEB3SA

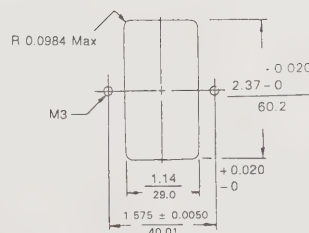
### D. TYPES AND FEATURES

DELTA PART NO.	† 03EB3 † 06EB3 † 10EB3	† 03EB3A † 06EB3A † 10EB3A	† 03EB3S † 06EB3S † 10EB3S	† 03EB3SA † 06EB3SA † 10EB3SA	* UL, CSA & VDE APPROVED, CURRENT RATING: UL 10A BOTH AT 125 VAC, & 250VAC, CSA & VDE-6A/250VAC.
FUSE*	DOUBLE	DOUBLE	SINGLE	SINGLE	**UL, CSA & VDE APPROVED, CURRENT RATING: UL & CSA-10A BOTH AT 125VAC & 250VAC; VDE-10A/250VAC. ELECTRICAL LIFETIME: 10,000 CYCLES. MAXIMUM INRUSH CURRENT: 51A
VOLTAGE SELECTOR SWITCH	△	△	△	△	
DOUBLE POLE POWER SWITCH**	△	△	△	△	
IEC CONNECTOR	△	△	△	△	
ELECTRICAL SCHEMATIC	FIG. A	FIG. B	FIG. A	FIG. B	

### E. MECHANICAL CONSTRUCTION



#### SUGGESTED MOUNTING CUTOUT



UNIT: INCH  
mm

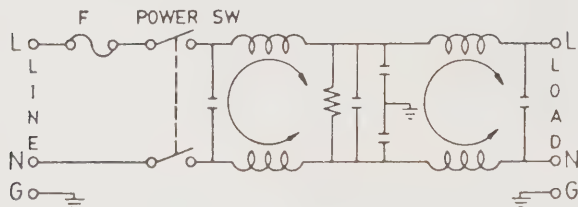




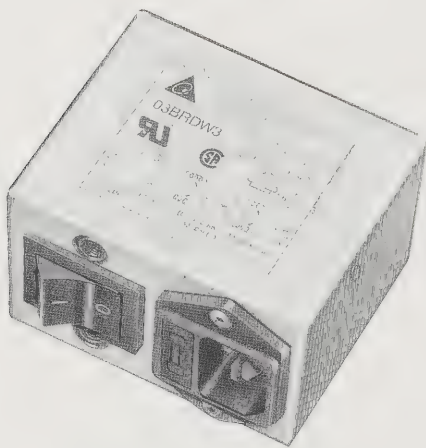
### A. INTRODUCTION

1. BR SERIES DESIGNED AS HIGH PERFORMANCE, TWO STAGE FILTER PROVIDING EXCELLENT NOISE ATTENUATION FOR LOW IMPEDANCE LOAD BOTH IN COMMON AND DIFFERENTIAL MODES IN LOW FREQUENCY APPLICATIONS SUCH AS SWITCHING POWER SUPPLIES.
2. INCORPORATES AN IEC CONNECTOR, A FUSE HOLDER AND A DOUBLE POLE POWER ON/OFF SWITCH.
3. DOUBLE POLE POWER SWITCHES ARE UL, CSA, VDE APPROVED RATED 10 AMP BOTH AT 125V AND 250V.
4. FUSE HOLDER DESIGNED FOR ONE IEC 5x20mm FUSE AND ONE SPARE FUSE. SAFETY INTERLOCK PREVENTS FUSE REMOVAL WITH LINE PLUG INSERTED.
5. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

### C. ELECTRICAL SCHEMATIC



### D. MECHANICAL CONSTRUCTION



### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.4mA @ 250VAC 50Hz: 0.7mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. RATED CURRENT  
03BRDW3: 3A  
05BRDW3: 5A
6. DOUBLE POLE POWER SWITCH  
CURRENT RATING:  
UL & CSA - 10A BOTH AT 125VAC & 250VAC  
VDE (T) (D) (N) (S) - 10A/250VAC  
10,000 CYCLES MINIMUM AT RATED LOAD  
MAXIMUM INRUSH: 100A FOR 10,000 CYCLES PER CEE #24.
7. MINIMUM INSERTION LOSS IN dB

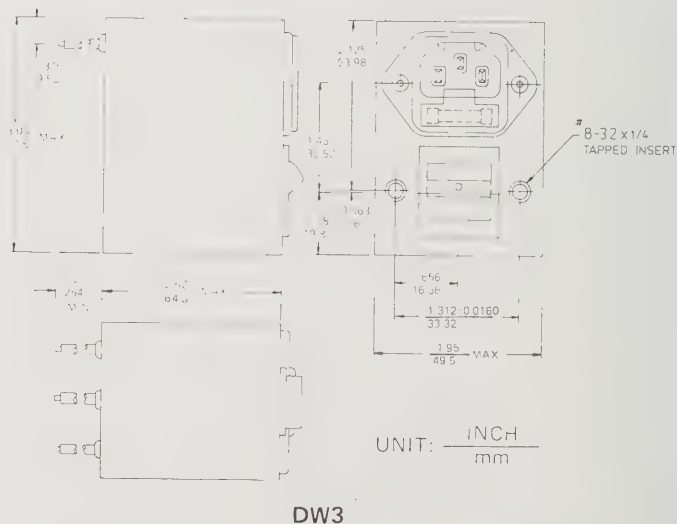
COMMON MODE (L-G) IN 50 OHM SYSTEM

TYPE	FREQUENCY-MHz								
	.01	.05	.10	.15	.50	1.0	5.0	10.0	30.0
†03BRDW3									
†05BRDW3*	15	30	40	50	60	55	45	40	30

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

†03BRDW3									
†05BRDW3*	3	6	35	45	60	60	55	50	40

\* APPROVED 3A/250VAC IN VDE



# LE SERIES

POWER ENTRY MODULE FILTERS



## A. INTRODUCTION

1. POWER MODULE INCORPORATES AN IEC CONNECTOR, A SINGLE FUSE (3AG 6.3 x 32mm FUSE) HOLDER, AND VOLTAGE SELECTOR SWITCH, PLUS AN EMI FILTER ALL IN ONE EASY-TO-INSTALL UNIT.
2. ADAPTS TO 100-120V OR 200-240V INPUT VOLTAGE SIMPLY BY REVERSING THE VOLTAGE SELECTOR.
3. FUSE PULLER DESIGN ENABLES EASY CHANGE OF FUSE.
4. THE FUSE HOLDER IS DESIGNED FOR ONE 3AG 6.3 x 32mm FUSE. SAFETY DEVICE PREVENTS FUSE REMOVAL WITH LINE PLUG INSERTED.
5. COMPACT DESIGN AND HIGH VOLUME PRODUCTION PROVIDE MAXIMUM FLEXIBILITY AND SIGNIFICANT SAVINGS IN SPACE AND COST OVER ASSEMBLY OF INDIVIDUAL COMPONENTS.
6. UL APPROVED AND CSA CERTIFIED.

## B. SPECIFICATIONS

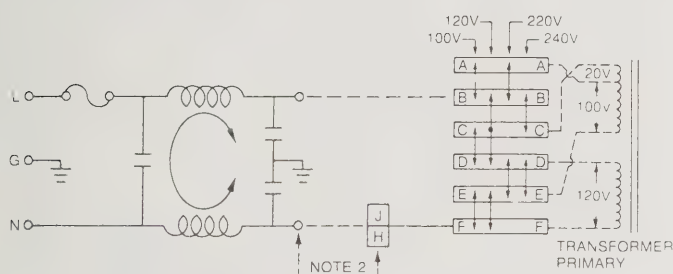
1. CURRENT RATING: 6A AC MAX.
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60 Hz
4. RATED VOLTAGE: 100-120VAC/200-240VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

TYPE	CURRENT RATING	FREQUENCY-MHz						
		.10	.15	.50	1.0	5.0	10	30
06LE4	6A	5	9	20	25	40	45	45

(PANEL THICKNESS .04-.06 INCHES)\*

## C. ELECTRICAL SCHEMATIC

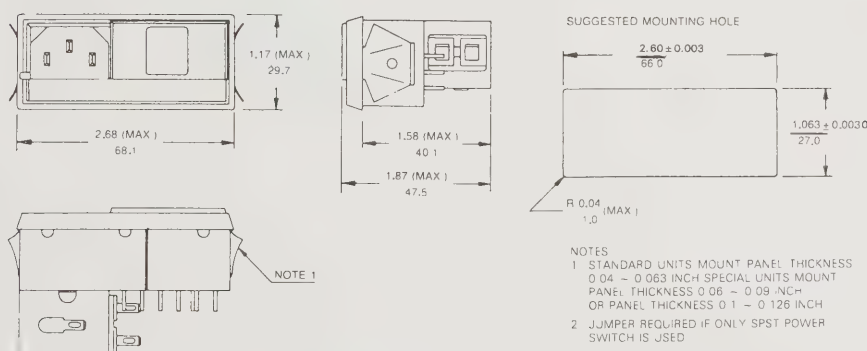
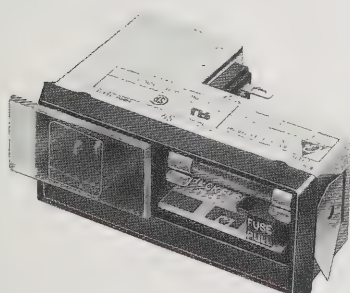


## D. TYPES & RATED CURRENT

DELTA PART NO.		06LE4
RATED CURRENT	115 VAC	6A
	250 VAC	6A
IEC CONNECTOR		✓
FUSE HOLDER		✓
VOLTAGE SELECTOR CARD		✓

UL, CSA APPROVED, CURRENT RATING:  
UL-15A & CSA-6A BOTH AT 125VAC & 250VAC.

## E. MECHANICAL CONSTRUCTION



\*OPTIONS FOR OTHER PANEL THICKNESSES:

- 06LE4(01) .06-.09 (inches)
- 06LE4(02) .10-.12 (inches)

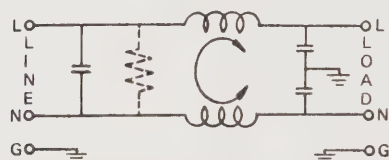
UNIT INCH  
mm



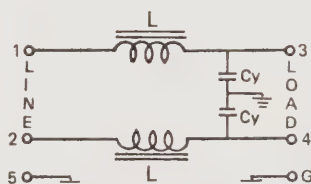
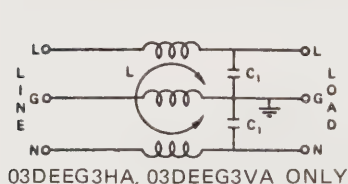
## A. INTRODUCTION

1. DESIGNED AS A GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-GROUND NOISE.
2. COMPACT AND RELIABLE AT LOW COST.
3. EG3M TYPE FEATURES SHORTER MOUNTING DEPTH THAN EG3H TYPE (EG3M TYPE-46mm; EG3H TYPE-49mm).
4. 03DEEG3HA AND 03DEEG3VA SPECIALLY DESIGNED WITH A GROUND CHOKE PROVIDING MOST EFFECTIVE EMI SUPPRESSION FOR HIGH FREQUENCY NOISE (RANGED 5 MHZ — 25 MHZ) FROM EITHER LOGIC BOARD OR KEYBOARD TO POWER LINE.
5. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NOS. 35929, 39428, 51405, 51419 & 55411). MOST PART NUMBERS ARE SEV APPROVED.
6. SECOND GENERATION DE SERIES INCLUDING DEEG3E (W3E) WITH IDENTICAL PERFORMANCE; DEEG3B (W3B) WITH BETTER PERFORMANCE; DEEG3R (W3R) SPECIALLY DESIGNED FOR SUPPRESSION OF HIGH FREQUENCY NOISE AND DEEG3L PROVIDES EFFECTIVE SUPPRESSION OF LOW FREQUENCY NOISE ARE AVAILABLE AT ECONOMICAL COST DUE TO FULLY AUTOMATIC ASSEMBLY.
7. BLEEDER RESISTOR IS ADDED FOR DEEG3E, DEEG3B, GEEG3E NUMBERS WITH SUFFIX "—R".

## C. ELECTRICAL SCHEMATIC



... BLEEDER RESISTOR FOR PART NUMBERS WITH SUFFIX "—R"



## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA, (0.2mA FOR EG3L) @ 250VAC 50Hz: 0.45mA, (0.4mA FOR EG3L)
2. HIPOT RATING (ONE MINUTE) LINE-TO-GROUND: 2250VDC LINE-TO-LINE: 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	.15	.50	1.0	5.0	10	30
1A(M.E.)	23	35	40	48	55	50
3A(M.E.)	18	28	32	52	55	50
6A(M.E.)	12	21	26	42	50	44
1A(V)	22	30	35	46	55	50
3A(V)	15	25	30	50	55	55
6A(V)	8	20	25	41	48	55
3A(HA.VA)	0	1	3	14	21	41
1A(B)	28	40	45	45	45	45
3A(B)	22	30	35	45	45	45
6A(B)	12	20	25	40	45	45
10A(B)	4	13	18	30	38	45
1A(R)	7	15	20	40	50	55
3A(R)	5	10	18	35	45	50
6A(R)	2	5	10	30	40	50
10A(R)	0	1	2	18	28	40
1A(L)	3	10	15	32	30	20
3A(L)	0	2	5	25	25	20
6A(L)	0	0	1	10	15	25

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

1A(L)	7	15	20	32	27	20
3A(L)	0	6	10	25	25	20
6A(L)	0	0	2	10	15	25

## D. SERIES DIMENSIONS

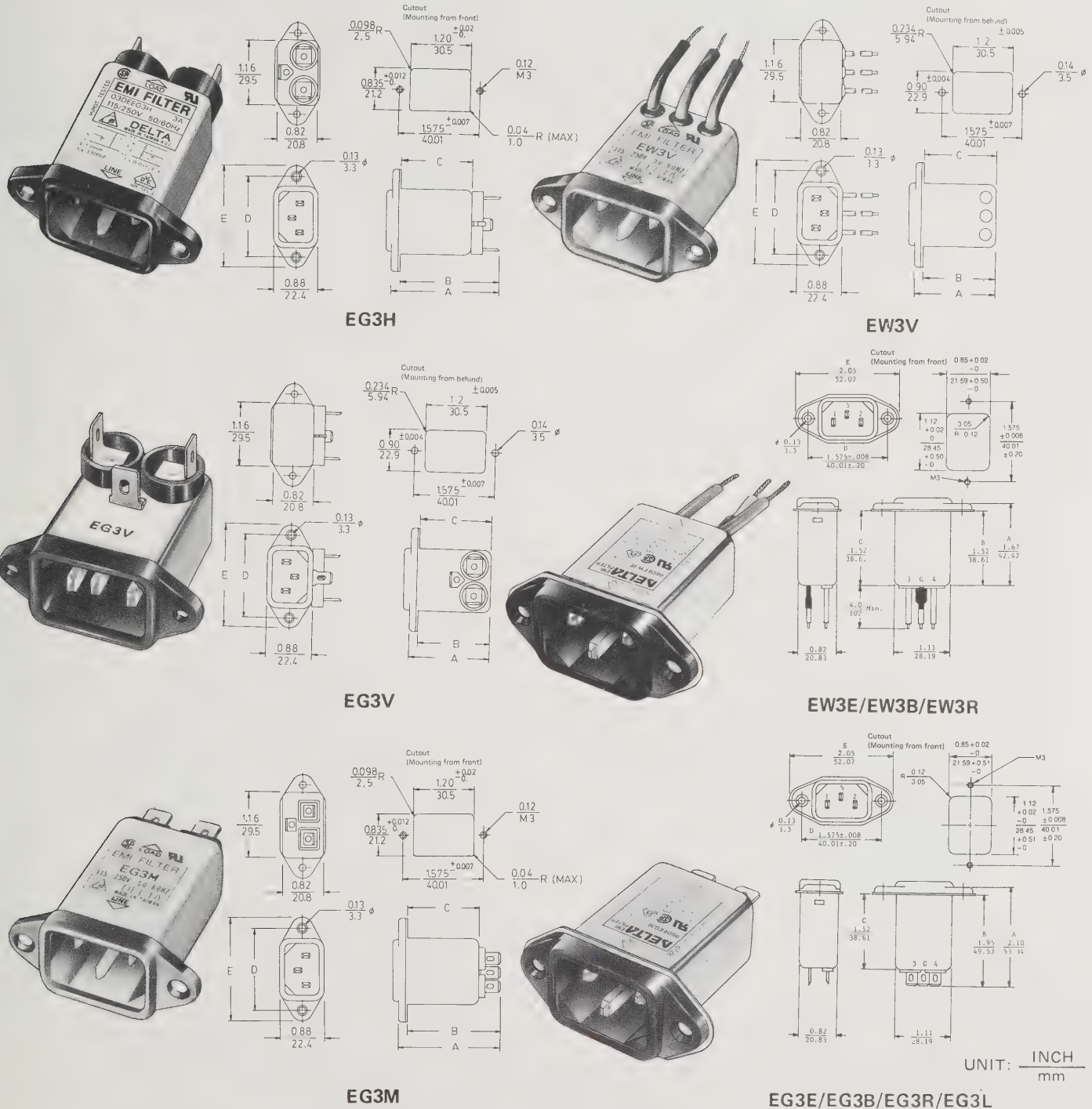
	DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
				A	B	C	D	E
†  †  †  †  †  †  †	01DEEG3M	1A	EG3M	1.95	1.81	1.38	1.575	1.99
	49.5			46.0	35.1	40.01	50.5	
	01DEEG3V		EG3V	1.55	1.38	—	1.575	1.99
	39.4			35.1	—	40.01	50.5	
	01DEEW3V		EW3V	1.55	1.38	—	1.575	1.99
	39.4			35.1	—	40.01	50.5	
	01DEEG3E		EG3E	2.10	1.95	1.52	1.575	2.05
	53.34			49.53	38.61	40.01	52.07	
	01DEEG3B		EG3B	2.10	1.95	1.52	1.575	2.05
	53.34			49.53	38.61	40.01	52.07	
	01DEEG3R		EG3R	2.10	1.95	1.52	1.575	2.05
	53.34			49.53	38.61	40.01	52.07	
	01DEEW3E		EW3E	1.67	1.52	1.52	1.575	2.05
	42.42			38.61	38.61	40.01	52.07	
	01DEEW3B		EW3B	1.67	1.52	1.52	1.575	2.05
	42.42			38.61	38.61	40.01	52.07	
	01DEEW3R		EW3R	1.67	1.52	1.52	1.575	2.05
	42.42			38.61	38.61	40.01	52.07	
	01DEEG3L		EG3L	2.10	1.95	1.52	1.575	2.05
	53.34			49.53	38.61	40.01	52.07	

	DELTA DART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
				A	B	C	D	E
†	03DEEG3M	3A	EG3M	1.95	1.81	1.38	1.575	1.99
				49.5	46.0	35.1	40.01	50.5
	03DEEG3V		EG3V	1.55	1.38	—	1.575	1.99
				39.4	35.1	—	40.01	50.5
	03DEEW3V		EW3V	1.55	1.38	—	1.575	1.99
				39.4	35.1	—	40.01	50.5
	03DEEG3H		EG3H	2.08	1.93	1.38	1.575	1.99
				52.8	49.0	35.1	40.01	50.5
	03DEEG3E		EG3E	2.10	1.95	1.52	1.575	2.05
				53.34	49.53	38.61	40.01	52.07
	03DEEG3B		EG3B	2.10	1.95	1.52	1.575	2.05
				53.34	49.53	38.61	40.01	52.07
	03DEEG3R		EG3R	2.10	1.95	1.52	1.575	2.05
				53.34	49.53	38.61	40.01	52.07
	03DEEW3E		EW3E	1.67	1.52	1.52	1.575	2.05
				42.42	38.61	38.61	40.01	52.07
	03DEEW3B		EW3B	1.67	1.52	1.52	1.575	2.05
				42.42	38.61	38.61	40.01	52.07

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
† 03DEEW3R	3A	EW3R	1.67	1.52	1.52	1.575	2.05
			42.42	38.61	38.61	40.01	52.07
03DEEG3L		EG3L	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07
06DEEG3M	6A	EG3M	1.95	1.81	1.38	1.575	1.99
			49.5	46.0	35.1	40.01	50.5
06DEEG3V		EG3V	1.55	1.38	—	1.575	1.99
			39.4	35.1	—	40.01	50.5
06DEEW3V		EW3V	1.55	1.38	—	1.575	1.99
			39.4	35.1	—	40.01	50.5
06DEEG3E		EG3E	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07
06DEEG3B		EG3B	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
† 06DEEG3R	6A	EG3R	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07
† 06DEEW3E		EW3E	1.67	1.52	1.52	1.575	2.05
			42.42	38.61	38.61	40.01	52.07
06DEEW3B		EW3B	1.67	1.52	1.52	1.575	2.05
			42.42	38.61	38.61	40.01	52.07
† 06DEEW3R	6A	EW3R	1.67	1.52	1.52	1.575	2.05
			42.42	38.61	38.61	40.01	52.07
† 06DEEG3L		EG3L	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07
10DEEG3B	10A	EG3B	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07
† 10DEEG3R		EG3R	2.10	1.95	1.52	1.575	2.05
			53.34	49.53	38.61	40.01	52.07

## E. MECHANICAL CONSTRUCTION



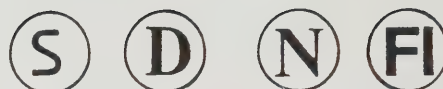
† NON-STANDARD PART NUMBER





# DE SERIES SNAP-IN MOUNTING

## COMPACT IEC CONNECTOR FILTERS



25/085/21



HPF  
565-3

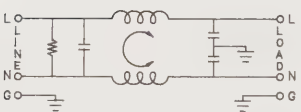
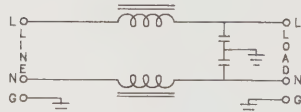
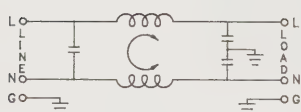


DB12

### A. INTRODUCTION

1. SNAP-IN MOUNTING TYPE FOR SAVING MORE LABOR COST, AND ALSO COMPACT AND RELIABLE AT LOW COST.
2. DESIGNED AS A GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR, DENG3B IS PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-GROUND NOISE, AND DENG3L IS PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-LINE NOISE.
3. BLEEDER RESISTOR IS ADDED WITH SUFFIX "-R" ON PART NUMBERS OF DENG3B.
4. AGENCY'S APPROVAL: ALL PARTS ARE UL RECOGNIZED & CSA CERTIFIED, DENG3L ARE VDE APPROVED DENG3B ARE SEV, SEMKO, NEMKO, DEMKO, APPROVED EXCEPT PARTS WITH '\*' WHICH ARE IN PROCESS, SETI & VDE ARE IN PROCESS.

### C. ELECTRICAL SCHEMATIC



### B. SPECIFICATIONS

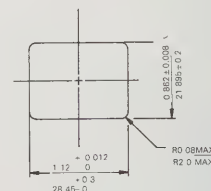
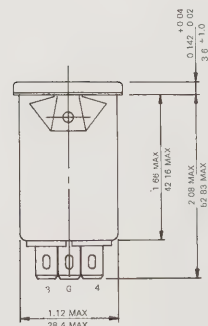
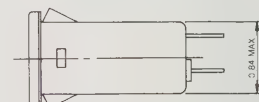
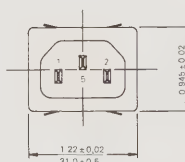
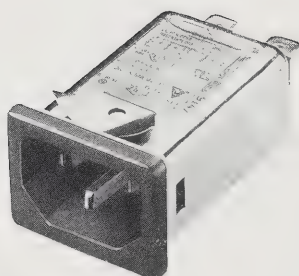
1. MAXIMUM LEAKAGE CURRENT EACH LINE TO GROUND:  
0.2mA @ 115VAC 60Hz  
0.4mA @ 250VAC 50Hz
2. HIPOT RATING (ONE MINUTE):  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50/60Hz
4. RATED VOLTAGE: 115/250V
5. MINIMUM INSERTION LOSS IN dB  
COMMON MODE (LINE TO GROUND) IN 50 OHM SYSTEM

TYPE	CURRENT RATING	FREQUENCY - MHz					
		.15	.50	1.0	5.0	10	30
01DENG3B	1A	28	40	45	45	45	45
03DENG3B	3A	22	30	35	45	45	45
06DENG3B	6A	12	20	25	40	45	45
* 10DENG3B	10A	4	10	15	30	38	45
01DENG3L	1A	3	10	15	32	30	20
03DENG3L	3A	1	2	5	25	25	20
06DENG3L	6A	0	0	1	10	15	25

#### DIFFERENTIAL MODE (LINE TO LINE) IN 50 OHM SYSTEM

01DENG3L	1A	7	15	20	32	27	20
03DENG3L	3A	1	5	10	25	25	20
06DENG3L	6A	0	0	2	10	15	25

### D. MECHANICAL CONSTRUCTION



SUGGESTED THICKNESS OF  
MOUNTING PANEL IS FROM  
0.04(1.0) TO 0.063(1.6)  
INCH(mm) OF MOUNTING CUTOUT.

NG3E

UNIT : INCH  
mm

# GE SERIES SNAP-IN MOUNTING

HIGH PERFORMANCE IEC CONNECTOR FILTERS



25/085/21



HPF  
565-3



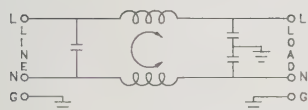
DB12

## A. INTRODUCTION

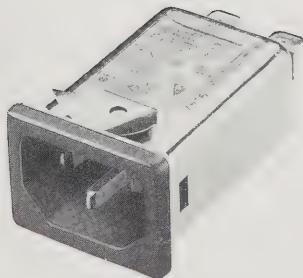
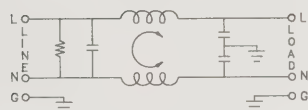
1. SNAP-IN MOUNTING TYPE FOR SAVING MORE LABOR COST, AND ALSO COMPACT AND RELIABLE AT LOW COST.
2. A HIGH PERFORMANCE GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR PROVIDING MORE EFFECTIVE EMI SUPPRESSION OF LINE-TO-LINE AND LOW FREQUENCY LINE-TO-GROUND NOISE.
3. TO REDUCE POWER SUPPLY CONDUCTED NOISE TO COMPLY WITH FCC AND VDE REQUIREMENTS.
4. BLEEDER RESISTOR IS ADDED WITH SUFFIX "-R" ON PART NUMBERS.
5. AGENCY'S APPROVAL: ALL PARTS ARE UL RECOGNIZED, CSA CERTIFIED, SEV, SEMKO, NEMKO, DEMKO & SETI APPROVED EXCEPT PART WITH '\*' WHICH IS IN PROCESS AT SEMKO, DEMKO & NEMKO, VDE IS IN PROCESS.

## C. ELECTRICAL SCHEMATIC

GENG3E



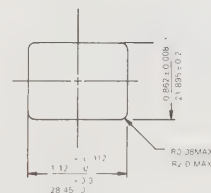
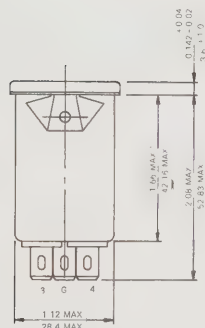
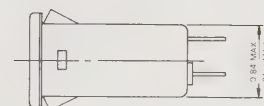
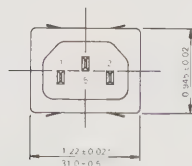
GENG3E-R



## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE TO GROUND:  
0.2mA @ 115VAC 60Hz  
0.4mA @ 250VAC 50Hz
2. HIPOT RATING (ONE MINUTE):  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50/60Hz
4. RATED VOLTAGE: 115/250V
5. MINIMUM INSERTION LOSS IN dB  
COMMON MODE (LINE TO GROUND) IN 50 OHM SYSTEM

TYPE	CURRENT RATING	FREQUENCY - MHz							
		.05	.10	.15	.50	1.0	5.0	10	30
01GENG3E	1A	18	25	28	35	38	38	40	40
03GENG3E	3A	12	18	20	25	30	38	40	40
06GENG3E	6A	6	10	12	18	24	35	40	40
*†10GENG3E	10A	1	2	4	10	13	28	35	40



SUGGESTED THICKNESS OF  
MOUNTING PANEL IS FROM  
0.04(1.0) TO 0.063(1.6)  
INCH(mm) OF MOUNTING CUTOUT.

NG3E

UNIT : INCH  
mm



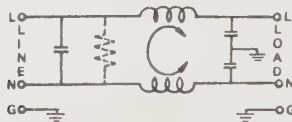
# GE SERIES

HIGH PERFORMANCE IEC CONNECTOR FILTERS

## A. INTRODUCTION

1. A HIGH PERFORMANCE GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR PROVIDING MORE EFFECTIVE EMI SUPPRESSION OF LINE-TO-LINE AND LOW FREQUENCY LINE-TO-GROUND NOISE.
2. TO REDUCE POWER SUPPLY CONDUCTED NOISE TO COMPLY WITH VDE AND FCC REQUIREMENTS.
3. COMPACT AND RELIABLE AT LOW COST.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NO. 39428 & 51419).
5. SECOND GENERATION GE SERIES WITH IDENTICAL OR BETTER PERFORMANCE AT MORE ECONOMICAL COST DUE TO AUTOMATIC ASSEMBLY.
6. BLEEDER RESISTORS CAN BE ADDED FOR "G3E" OR "W3E" TYPES WITH SUFFIX "-R" ON PART NUMBERS.

## C. ELECTRICAL SCHEMATIC



... BLEEDER RESISTOR FOR PART NUMBERS WITH SUFFIX "-R"

## D. SERIES DIMENSIONS

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
01GEEG3H	1A	EG3H	1.95	1.81	1.38	1.575	1.99
01GEEW3V		EW3V	49.5	46.0	35.1	40.01	50.5
01GEEG3E		EG3E	1.55	1.38	-	1.575	1.90
01GEEW3E		EW3E	39.4	35.1	-	40.01	50.5
03GEEG3H	3A	EG3H	2.10	1.95	1.52	1.575	2.05
03GEEW3V		EW3V	53.34	49.53	38.61	40.01	52.07
03GEEG3E		EG3E	1.67	1.52	1.52	1.575	2.05
03GEEW3E		EW3E	42.42	38.61	38.61	40.01	52.07

## B. SPECIFICATIONS

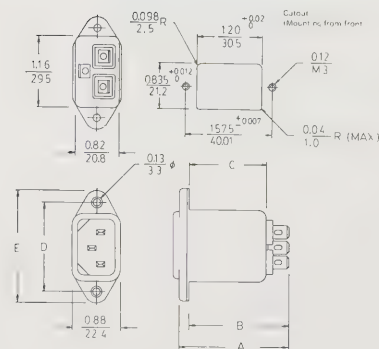
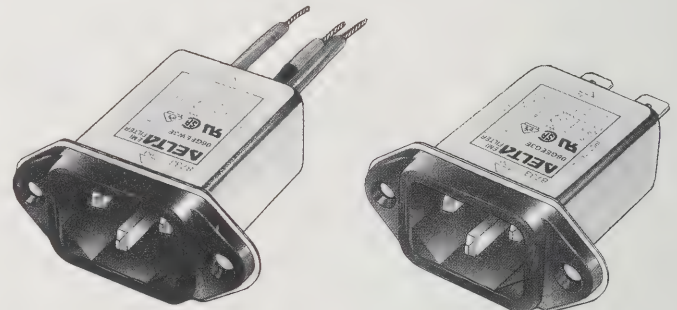
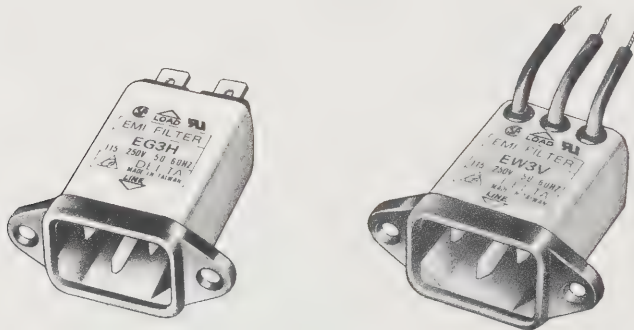
1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE) LINE-TO-GROUND: 2250VDC LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

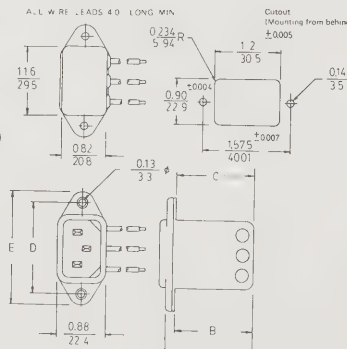
CURRENT RATING	FREQUENCY-MHz							
	.05	.10	.15	.50	1.0	5.0	10	30
1A(H)	15	21	26	36	44	54	55	55
3A(H)	14	20	24	30	38	50	55	55
6A(H)	6	11	15	25	32	45	50	60
1A(V)	11	20	24	35	42	50	55	55
3A(V)	9	16	20	29	36	48	52	55
6A(V)	5	10	14	23	30	42	45	50
1A(E)	18	25	28	35	38	38	40	40
3A(E)	12	18	20	25	30	38	40	40
6A(E)	6	10	12	18	24	35	40	40
10A(E)	1	2	4	10	13	28	35	40

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
03GEEW3E	3A	EW3E	1.67	1.52	1.52	1.575	2.05
06GEEG3H	6A	EG3H	42.42	38.61	38.61	40.01	52.07
06GEEW3V		EW3V	1.95	1.81	1.38	1.575	1.99
06GEEG3E		EG3E	49.5	46.0	35.1	40.01	50.5
06GEEW3E		EW3E	1.55	1.38	-	1.575	1.90

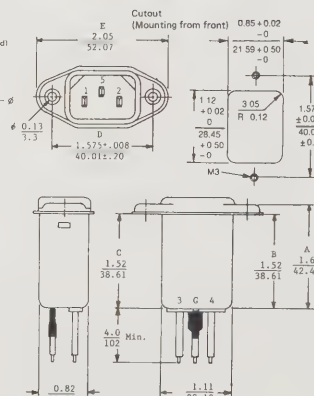
## E. MECHANICAL CONSTRUCTION



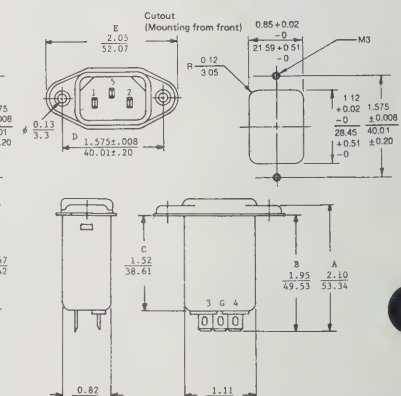
EG3H



EW3V



EW3E



EG3E

UNIT: INCH  
mm

† NON-STANDARD PART NUMBER

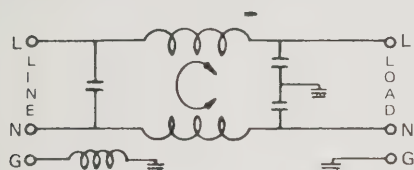


HPF  
565-3

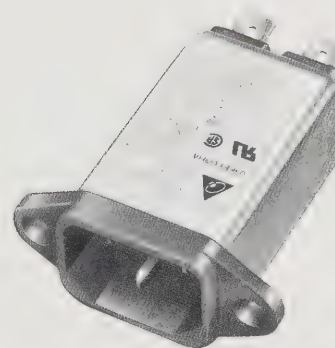
## A. INTRODUCTION

1. A HIGH PERFORMANCE GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR PROVIDING MORE EFFECTIVE EMI SUPPRESSION OF LINE TO LINE AND LOW FREQUENCY LINE-TO-GROUND NOISE.
2. TO REDUCE POWER SUPPLY CONDUCTED NOISE TO COMPLY WITH VDE AND FCC REQUIREMENTS.
3. COMPACT AND RELIABLE AT LOW COST.
4. SPECIALLY DESIGNED WITH A GROUND CHOKE PROVIDING MOST EFFECTIVE EMI SUPPRESSION FOR HIGH FREQUENCY NOISE (RANGED 5 MHZ — 25 MHZ) FROM EITHER LOGIC BOARD OR KEYBOARD TO POWER LINE.
5. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED OR TUV APPROVED.

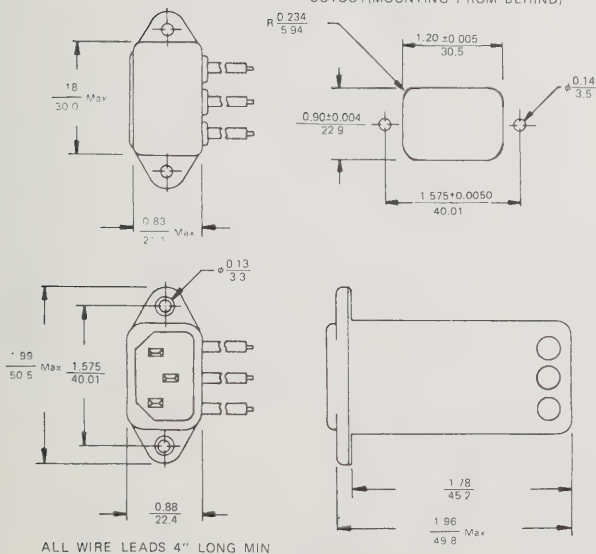
### C. ELECTRICAL SCHEMATIC



#### D. MECHANICAL CONSTRUCTION



CUTOUT(MOUNTING FROM BEHIND)



03KEEW3V

† NON-STANDARD PART NUMBER

## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND@115VAC 60Hz: 0.25mA  
@250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

### COMMON MODE (L-G) IN 50 OHM SYSTEM

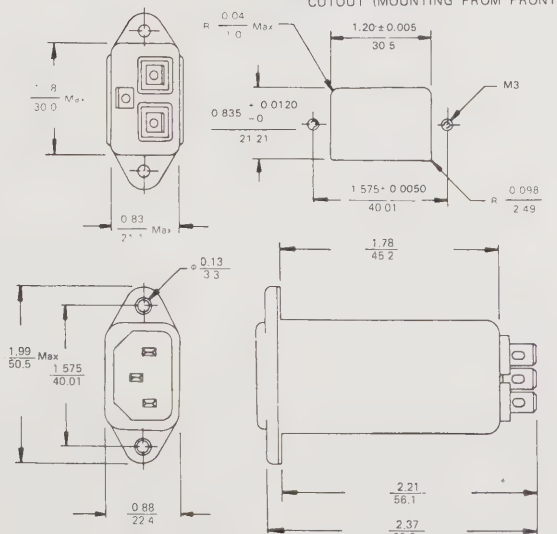
TYPE	FREQUENCY-MHz								
	.05	.10	.15	.50	1.0	5.0	10	30	
† 03KEEW3V	14	18	20	25	32	47	50	52	
† 03KEEG3HA	14	18	20	25	32	47	50	52	
*† 08KEEG3HA	5	8	10	15	20	35	40	50	

### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

† 03KEEW3V	1	3	5	14	18	50	50	50
† 03KEEG3HA	1	3	5	14	18	50	50	50
*† 08KEEG3HA	1	4	5	10	15	45	40	50

\* TUV APPROVED IN 6A.

CUTOUT (MOUNTING FROM FRONT)



03KEEG3HA  
08KEEG3HA

UNIT:  $\frac{\text{INCH}}{\text{mm}}$



# SE SERIES

TWO STAGE HIGH PERFORMANCE  
IEC CONNECTOR FILTERS

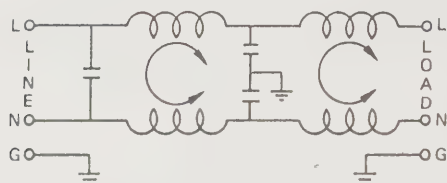


HPF  
0565-3

## A. INTRODUCTION

1. A HIGH PERFORMANCE, TWO STAGE FILTER WITH AN IEC CONNECTOR PROVIDING MOST EFFECTIVE EMI SUPPRESSION OF LINE-TO-LINE AND LOW FREQUENCY LINE-TO-GROUND NOISE.
2. TO REDUCE POWER SUPPLY CONDUCTED NOISE TO COMPLY WITH VDE AND FCC REQUIREMENTS.
3. COMPACT AND RELIABLE AT MODERATE COST.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NOS. 49968 & 39428).

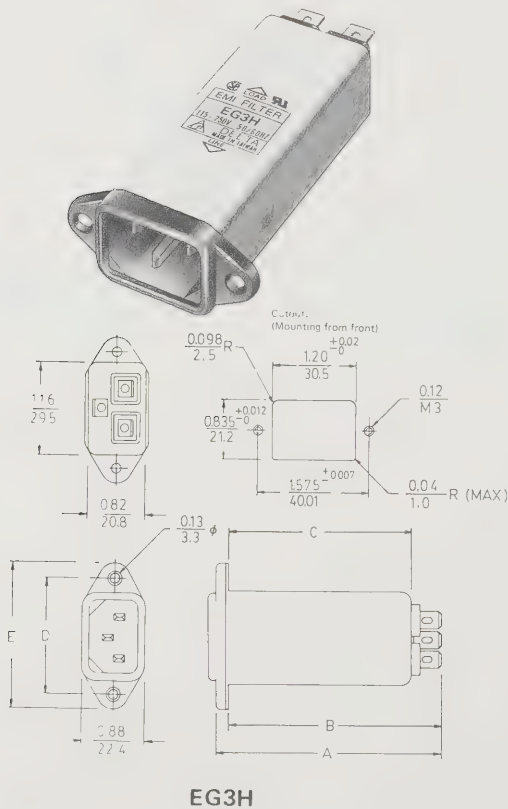
### C. ELECTRICAL SCHEMATIC



#### D. SERIES DIMENSIONS

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
01SEEG3H	1A	EG3H	3.51	3.35	2.92	1.575	1.99
			89.2	85.1	74.2	40.01	50.5
01SEEG3V		EG3V	3.08	2.92	—	1.575	1.99
			78.2	74.2	—	40.01	50.5
03SEEG3H	3A	EG3H	3.51	3.35	2.92	1.575	1.99
			89.2	85.1	74.2	40.01	50.5

## E. MECHANICAL CONSTRUCTION



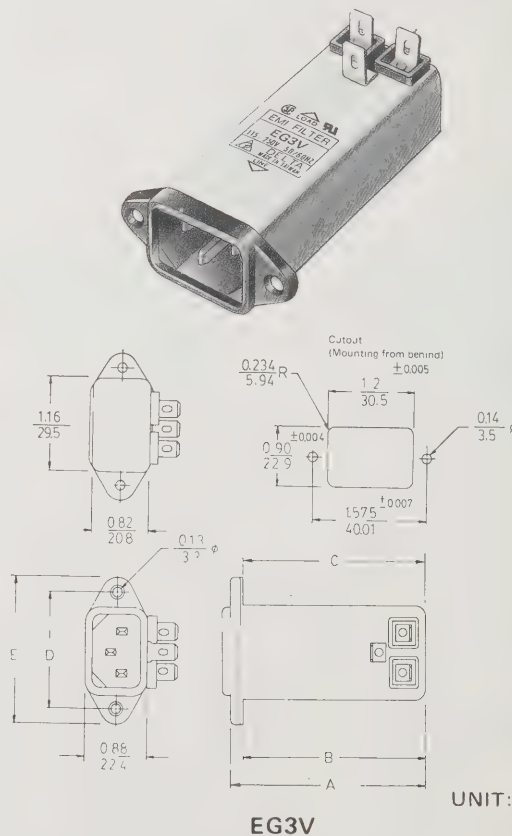
## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz:0.25mA  
                             @ 250VAC 50Hz:0.45mA
2. HIPOT RATING (ONE MINUTE)  
   LINE-TO-GROUND : 2250VDC  
   LINE-TO-LINE     : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

### COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz							
	.05	.10	.15	.50	1.0	5.0	10	30
1A	18	33	45	66	70	70	65	60
3A	13	30	42	65	70	70	65	55
6A	11	12	25	50	60	70	65	55
DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM								
1A	3	6	9	22	33	60	70	60
3A	2	5	8	20	30	60	70	60
6A	1	4	6	15	22	50	60	60

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
03SEEG3V	3A	EG3V	3.08	2.92	—	1.575	1.99
			78.2	74.2	—	40.01	50.5
06SEEG3H	6A	EG3H	3.51	3.35	2.92	1.575	1.99
			89.2	85.1	74.2	40.01	50.5
06SEEG3V		EG3V	3.04	2.92	—	1.575	1.99
			77.2	74.2	—	40.01	50.5

UNIT:  $\frac{\text{INCH}}{\text{mm}}$ 

† NON-STANDARD PART NUMBER

# BE SERIES

## FUSED CONNECTOR FILTERS

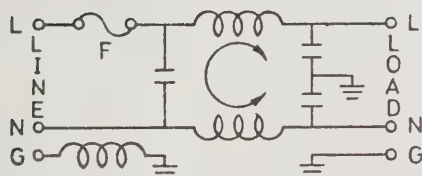
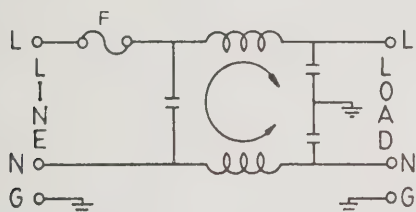


HPF  
0565-3

### A. INTRODUCTION

1. DESIGNED AS A GENERAL PURPOSE FILTER WITH A FUSE HOLDER PROVIDING EFFECTIVE EMI SUPPRESSION OF BOTH COMMON AND DIFFERENTIAL MODE NOISE.
2. FUSE HOLDER DESIGNED FOR ONE IEC 5x20mm FUSE AND ONE SPARE FUSE. SAFETY INTERLOCK PREVENTS FUSE REMOVAL WITH LINE PLUG INSERTED.
3. 04BEEG3SA DESIGNED WITH A GROUND CHOKE PROVIDING MOST EFFECTIVE EMI SUPPRESSION FOR HIGH FREQUENCY NOISE (RANGE 5 MHZ - 25MHZ) FROM EITHER LOGIC BOARD OR KEYBOARD TO POWER LINE.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED (VDE CERTIFICATE NO. 39431).

### C. ELECTRICAL SCHEMATIC



04BEEG3SA ONLY

### D. SERIES DIMENSIONS

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
02BEEG3H	2A	EG3H	2.54	2.40	1.98	1.417	1.73
			64.5	61.0	50.3	36.0	43.9
04BEEG3H	4A	EG3H	2.54	2.40	1.98	1.417	1.73
			64.5	61.0	50.3	36.0	43.9
04BEEG3S	4A	EG3S	2.23	2.08	1.63	1.417	1.73
			56.7	52.8	41.3	36.0	43.9
04BEEG3SA	4A	EG3SA	2.23	2.08	1.63	1.417	1.73
			56.7	52.8	41.3	36.0	43.9
06BEEG3H	6A	EG3H	2.54	2.40	1.98	1.417	1.73
			64.5	61.0	50.3	36.0	43.9

### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE) LINE-TO-GROUND: 2250VDC LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

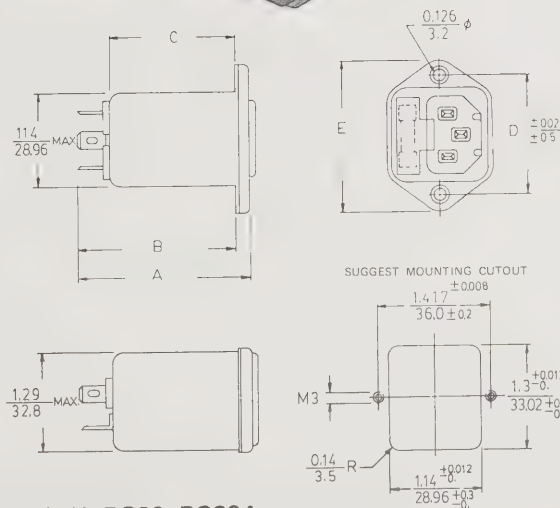
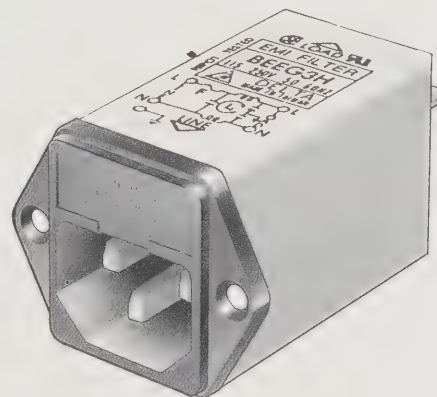
#### COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	.10	.15	.50	1.0	5.0	10	30
2A	20	25	35	40	55	55	55
4A, 4A(S)	23	26	35	40	50	55	50
4A(SA)	10	12	20	30	42	45	50
6A	18	24	30	35	50	55	45

#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

2A	4	6	15	25	40	45	45
4A	4	6	15	25	40	45	45
4A(S)	0	1	5	12	30	40	40
4A(SA)	3	5	12	18	40	55	50
6A	4	6	15	25	40	45	45

### E. MECHANICAL CONSTRUCTION



EG3H, EG3S, EG3SA

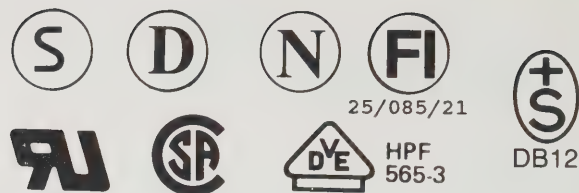
UNIT: INCH  
mm





IEC Connector Medical Filters For  
UL544 Health Care Equipment

# DE, DH SERIES



## A. INTRODUCTION

1. DE SERIES ARE COMPACT AND RELIABLE AT LOW COST ECONOMICAL COST DUE TO FULLY AUTOMATIC ASSEMBLY.
2. PROVIDES VERY LOW LEAKAGE CURRENT MEETING MEDICAL AND DENTAL EQUIPMENT REQUIREMENTS OF UL 544.
3. UL 544 IS BROKEN DOWN INTO TWO CATEGORIES:
  - A. PATIENT CARE EQUIPMENT: "EQUIPMENT THAT IS INTENDED TO BE USED IN THE PATIENT'S VICINITY IN A HEALTH CARE FACILITY. IT INCLUDES EQUIPMENT FOR USE ON OR WITH, OR LIKELY TO BE CONTACTED BY, A PATIENT IN THE COURSE OF HIS TREATMENT." THIS EQUIPMENT CAN HAVE A MAXIMUM LEAKAGE CURRENT OF 100 MICRO AMPS AT 115 VAC, 60 HZ.
  - B. NONPATIENT EQUIPMENT: "EQUIPMENT PRIMARILY FOR USE IN A HEALTH CARE FACILITY THAT IS INTENDED FOR USE IN OTHER THAN THE PATIENT VICINITY." THIS EQUIPMENT CAN HAVE A MAXIMUM LEAKAGE CURRENT OF 500 MICRO AMPS AT 115 VAC, 60 HZ.
4. ALL PART NUMBERS HAVE 2 MICRO AMPS MAXIMUM LEAKAGE CURRENT AT 115 VAC, 60 HZ WHICH FULFILLS CATEGORY A ABOVE FOR PATIENT CARE EQUIPMENT. HOWEVER, 06DHEG3H 06DHEG3V AND DE SERIES ARE SUGGESTED TO BE USED FOR NONPATIENT EQUIPMENT AS THEY ARE PLUG-IN DEVICES.
5. DH SERIES ARE UL 1283 AND 544 RECOGNIZED, CSA C22.2 NO. 0 AND NO. 8 CERTIFIED, AND VDE APPROVED.
6. DE SERIES ARE UL RECOGNIZED, CSA CERTIFIED AND VDE, SEV, NEMKO, DEMKO, SEMKO, FEMKO APPROVED.

## B. SPECIFICATIONS

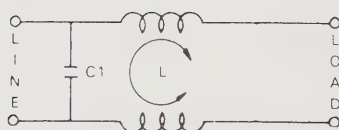
1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz:  $2\mu A$   
@ 250VAC 50Hz:  $5\mu A$
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE: 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

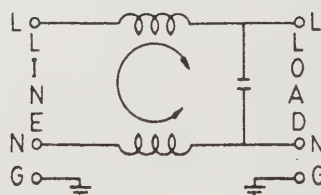
TYPE	FREQUENCY-MHz									
	0.15	.50	1.0	5.0	10.0	30.0	0.15	.50	1.0	5.0
06DHEG3H	12	15	20	22	20	15	12	15	20	22
06DHEG3V	12	15	18	20	20	18	12	15	18	20
06DHAG5	10	15	18	20	20	18	10	15	18	20
01DEEG3BM	25	30	40	30	20	10	25	30	40	30
03DEEG3BM	18	25	25	30	25	12	18	25	25	30
06DEEG3BM	8	20	24	26	20	15	8	20	24	26
10DEEG3BM	3	7	12	14	10	5	3	7	12	14

## C. ELECTRICAL SCHEMATIC

DE SERIES



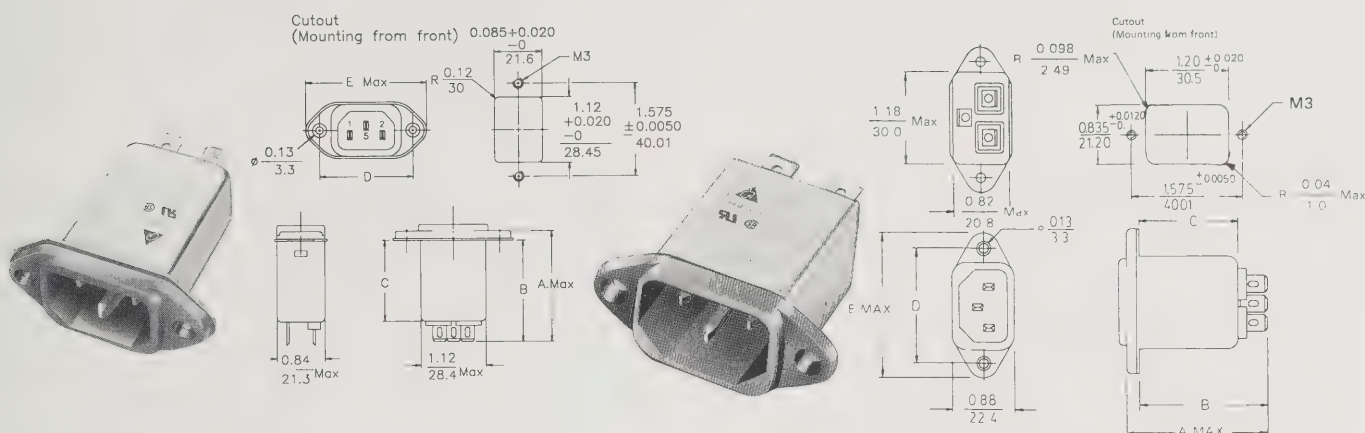
DH SERIES



# D. SERIES DIMENSIONS

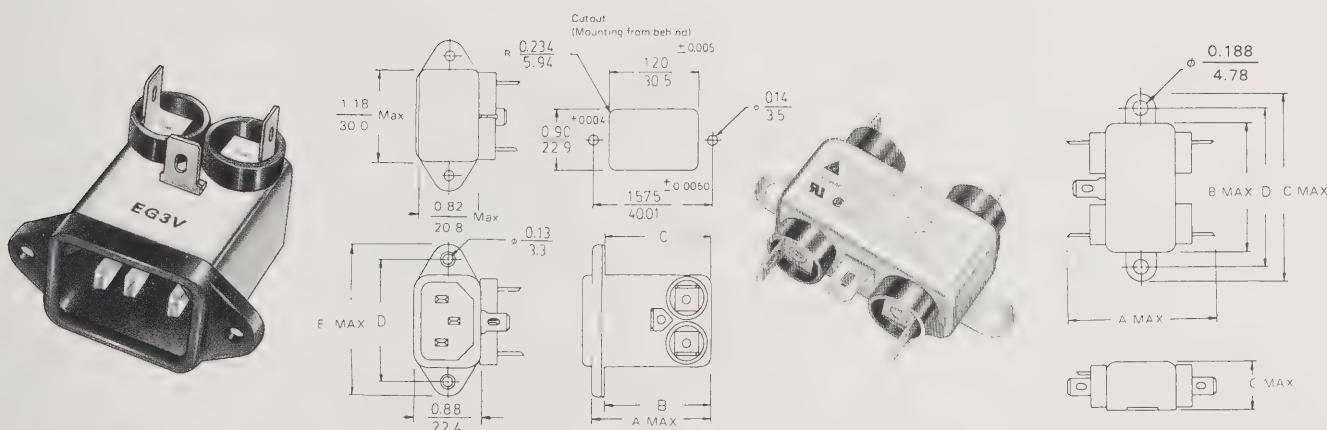
DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
06DHEG3H	6A	EG3H	1.9 /	1.81	1.38	1.5 /5	1.99
			50.0	46.0	35.1	40.01	50.5
EG3V		1.55	1.38	1.33	1.5 /5	1.99	
		39.4	35.1	35.1	40.01	50.5	
06DHAG5		AG5	2.15	1.77	0.65	2.13	2.56
			54.6	45.0	16.5	54.1	65.0
DEEG3BM	1A, 3A 6A, 10A	EG3BM	2.10	1.95	1.52	1.575	2.05
			53.3	49.5	38.6	40.01	52.1

# E. MECHANICAL CONSTRUCTION



EG3E/EG3B/EG3R/EG3L/EG3BM

EG3H



EG3V

AG5

UNIT:  $\frac{\text{INCH}}{\text{mm}}$



# DB SERIES

GENERAL PURPOSE COMMON MODE FILTERS

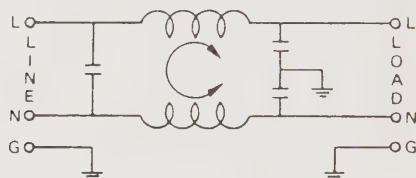


HPF  
565-3

## A. INTRODUCTION

1. DESIGNED AS A GENERAL PURPOSE FILTER PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-GROUND NOISE WHICH CAN BE USED IN A WIDE VARIETY OF ELECTRICAL AND ELECTRONIC EQUIPMENT.
2. IN SMALL SIZE AT LOWEST COST.
3. OFFERS A BROAD SELECTION OF MECHANICAL CONFIGURATIONS AND CURRENT RATINGS.
4. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED. MOST PART NUMBERS ARE VDE APPROVED.

## C. ELECTRICAL SCHEMATIC



## D. SERIES DIMENSIONS

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
02DBAG5	2A	AG5	2.15	1.77	0.65	2.13	2.54
			54.6	45.0	16.5	54.1	64.5
02DBAW5		AW5	0.96	1.77	0.65	2.13	2.54
			24.4	45.0	16.5	54.1	64.5
03DBAG5	3A	AG5	2.54	1.77	0.77	2.13	2.50
			64.5	45.0	19.5	54.1	63.5
03DBAW5		AW5	1.33	1.77	0.77	2.13	2.50
			33.8	45.0	19.5	54.1	63.5
05DBAG5	5A	AG5	2.54	1.77	0.77	2.13	2.50
			64.5	45.0	19.5	54.1	63.5
05DBAW5		AW5	1.33	1.77	0.77	2.13	2.50
			33.8	45.0	19.5	54.1	63.5

## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz					
	.15	.50	1.0	5.0	10	30
2, 3, 5A	15	30	38	45	45	40
10A	20	30	35	50	50	45
20A	13	20	25	40	45	45

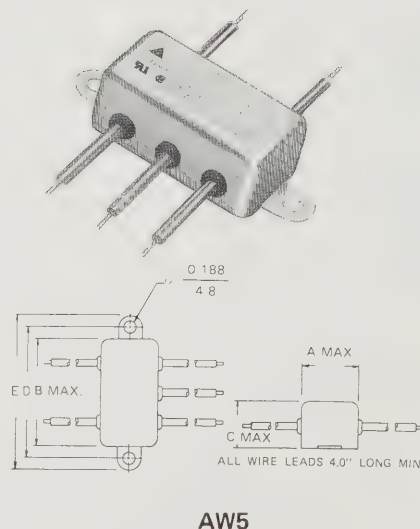
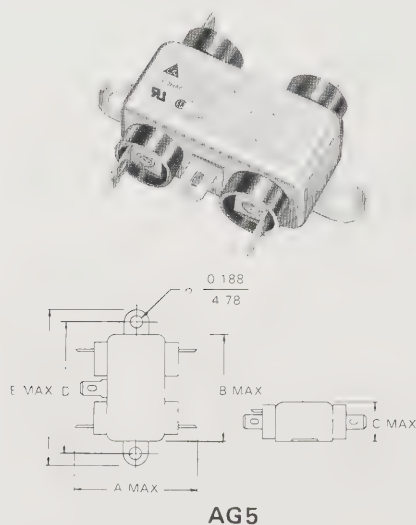
DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

2, 3, 5A	6	15	20	40	45	45
10A	6	15	20	44	45	45
20A	15	24	28	45	45	45

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
10DBAG5	10A	AG5	2.54	1.77	1.18	2.13	2.50
			64.5	45.0	30.0	54.1	63.5
10DBAW5		AW5	1.33	1.77	1.18	2.13	2.50
			33.8	45.0	30.0	54.1	63.5
20DBAG5	20A	AG5	3.25	2.02	1.15	2.38	2.75
			82.5	51.3	29.2	60.5	69.9

△ VDE 0565 PART 3 APPROVED 16A/250VAC

## E. MECHANICAL CONSTRUCTION

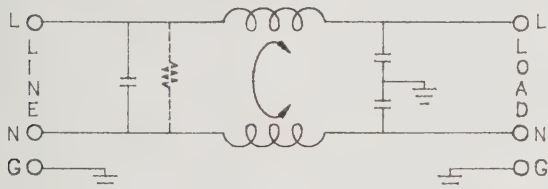


UNIT:  $\frac{\text{INCH}}{\text{mm}}$

### A. INTRODUCTION

1. DESIGNED AS A GENERAL PURPOSE FILTER PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-GROUND NOISE WHICH CAN BE USED IN A WIDE VARIETY OF ELECTRICAL AND ELECTRONIC EQUIPMENT.
2. IN SMALL SIZE AT LOWEST COST.
3. OFFERS A BROAD SELECTION OF MECHANICAL CONFIGURATIONS AND CURRENT RATINGS.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED VDE APPROVED.

### C. ELECTRICAL SCHEMATIC



.... BLEEDER RESISTOR FOR PART NUMBER 30VBGS5 ONLY

### D. SERIES DIMENSIONS

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
03VBAG5	3A	AG5	2.15	1.77	0.65	2.13	2.54
			54.61	44.96	16.51	54.10	64.52
03VBAW5	3A	AW5	0.96	1.77	0.65	2.13	2.54
			24.38	44.96	16.51	54.10	64.52
05VBAG5	5A	AG5	2.54	1.77	0.79	2.13	2.54
			64.52	44.96	20.07	54.10	64.52
05VBAW5	5A	AW5	1.33	1.77	0.79	2.13	2.54
			33.78	44.96	20.07	54.10	64.52
10VBAG5	10A	AG5	2.54	1.77	1.18	2.13	2.54
			64.52	44.96	29.97	54.10	64.52
10VBAW5	10A	AW5	1.33	1.77	1.18	2.13	2.54
			33.78	44.96	29.97	54.10	64.52
10VBAS5	10A	AS5	31.0	2.02	1.18	2.38	2.77
			78.74	51.31	29.97	60.45	70.36
20VBAG5	20A	AG5	3.25	2.02	1.15	2.38	2.77
			82.55	51.31	29.21	60.45	70.36
20VBAS5	20A	AS5	3.37	2.02	1.15	2.38	2.77
			85.60	51.31	29.21	60.45	70.36
30VBGS5	30A	GS5	5.25	3.40	1.54	3.75	4.14

### B. SPECIFICATIONS

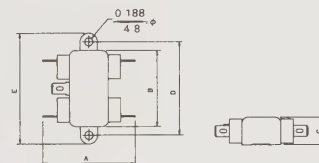
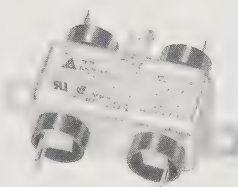
1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz: 0.2mA (0.4mA Max FOR 30VBGS5)  
@250VAC 50Hz: 0.4mA (0.7mA Max FOR 30VBGS5)
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

#### COMMON MODE (L-G) IN 50 OHM SYSTEM

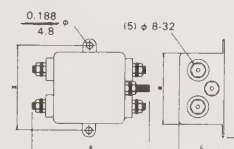
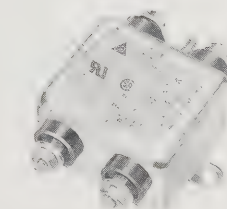
CURRENT RATING	FREQUENCY-MHz				
	.15	.50	1.0	5.0	10. 30
3A	20	30	38	45	45 50
5A	10	20	28	45	45 50
10A	13	20	22	35	35 50
20A	13	20	25	40	45 48
30A	8	21	26	34	37 38

#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

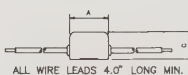
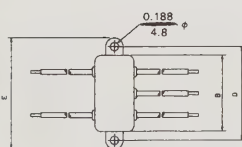
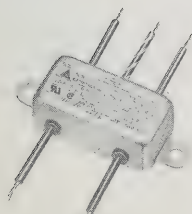
3A	2	8	40	35	30
5A	2	8	30	35	30
10A	2	8	30	30	30
20A	2	8	35	35	40
30A	10	15	45	50	42



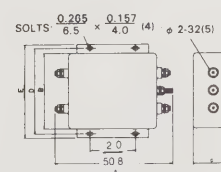
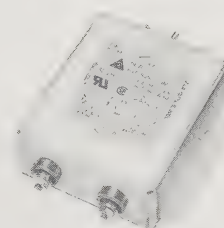
AG5



AS5



AW5



GS5

UNIT: INCH  
mm

† NON-STANDARD PART NUMBER





## A. INTRODUCTION

1. EFFECTIVELY CONTROL EMI SUPPRESSION OF BOTH LINE-TO-LINE AND LINE-TO-GROUND NOISE.
2. WELL SUITED FOR USE IN COMPUTERS, PERIPHERAL EQUIPMENT AND INDUSTRIAL APPLICATIONS WHERE PULSE, CONTINUOUS AND/OR INTERMITTENT EMI NOISE IS PRESENT.
3. IN A WIDE SELECTION OF TERMINATIONS AND CURRENT RATINGS.
4. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED. MOST PART NUMBERS ARE VDE APPROVED.

## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 115VAC 60Hz:0.25mA  
@ 250VAC 50Hz:0.45mA
2. HIPOT PATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

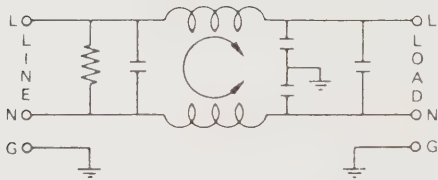
COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz					
	.15	.50	1.0	5.0	10	30
2, 3, 5A	22	30	38	47	50	40
3A(S), 5A(S)	22	30	38	50	55	45
10A, 10A(S)	15	20	28	45	45	45
20A	14	19	28	40	42	35

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

2, 3, 5A	10	46	48	50	50	45
3A(S), 5A(S)	12	46	48	55	50	45
10A, 10A(S)	8	38	55	45	45	45
20A	10	35	50	50	45	40

## C. ELECTRICAL SCHEMATIC



## D. SERIES DIMENSIONS

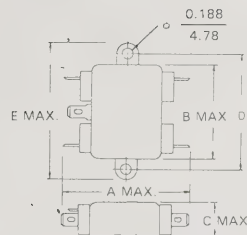
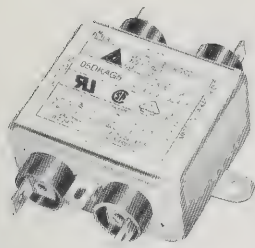
DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
02DKAG5	2A	AG5	2.99	2.04	0.90	2.38	2.79
02DKAW5		AW5	1.83	2.04	0.90	2.38	2.79
† 03DKAG5	3A	AG5	2.99	2.04	1.16	2.38	2.79
† 03DKAW5		AW5	1.83	2.04	1.16	2.38	2.79
† 03DKDG3S		DG3S	3.14	2.04	1.29	2.38	0.61
† 03DKDW3S		DW3S	2.55	2.04	1.29	2.38	0.61
05DKAG5	5A	AG5	2.99	2.04	1.16	2.38	2.79
05DKAW5		AW5	1.83	2.04	1.16	2.38	2.79
† 05DKAS5		AS5	3.37	2.04	1.16	2.38	2.79
			85.6	51.8	29.5	60.5	70.9

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
† 05DKDG3S	5A	DG3S	3.14	2.04	1.29	1.575	0.61
† 05DKDW3S		DW3S	2.55	2.04	1.29	1.575	0.61
10DKAG5	10A	AG5	3.25	2.04	1.16	2.38	2.79
† 10DKAW5		AW5	2.08	2.04	1.16	2.38	2.79
† 10DKAS5		AS5	3.37	2.04	1.16	2.38	2.79
† 10DKDG3S		DG3S	3.22	2.30	1.29	1.575	0.61
† 10DKDW3S	20A	DW3S	2.63	2.30	1.29	1.575	0.61
† 20DKBG5		BG5	3.25	2.52	1.54	2.94	3.36
† 20DKBS5		BS5	3.37	2.52	1.54	2.94	3.37
			85.6	64.0	39.1	74.7	85.6

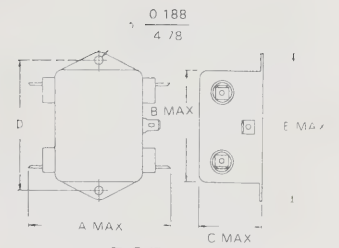
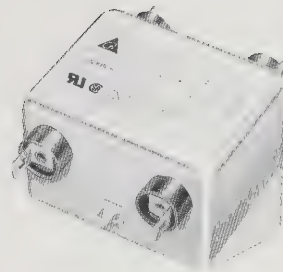
△ APPROVED TO VDE 0565 PART 3 16A/250VAC

△△ VDE APPROVED 6A/250VAC

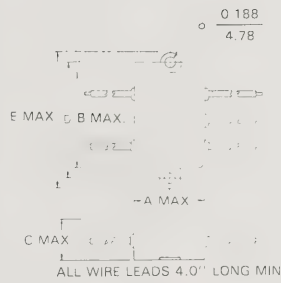
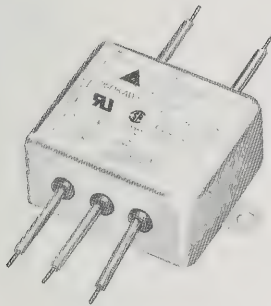
# E. MECHANICAL CONSTRUCTION



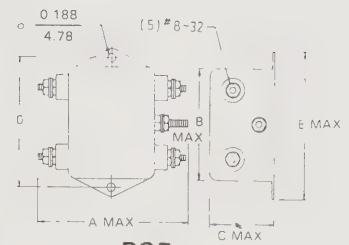
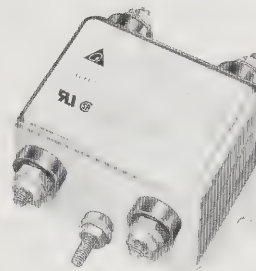
**AG5**



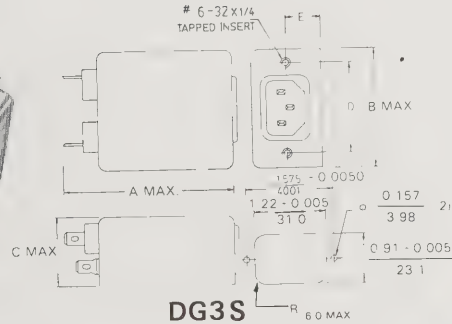
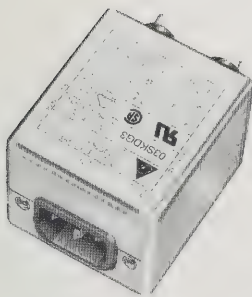
**BG5**



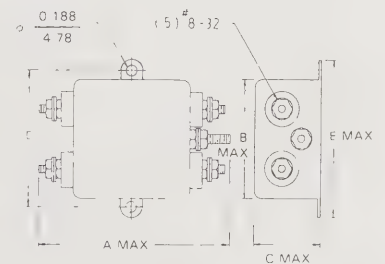
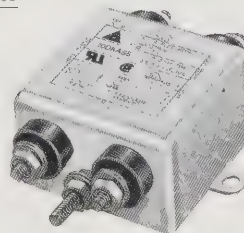
**AW5**



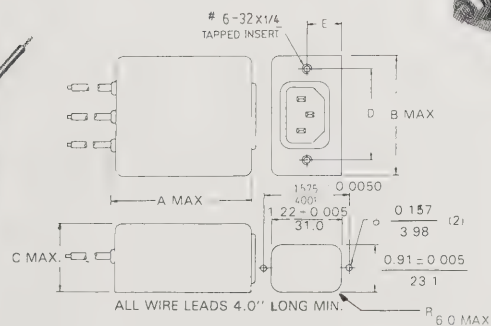
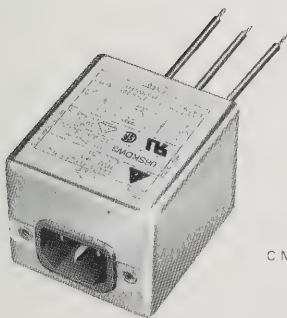
**BS5**



**DG3S**



**AS5**



**DW3S**

UNIT:  $\frac{\text{INCH}}{\text{mm}}$





# DR SERIES

## HIGH PERFORMANCE FILTERS

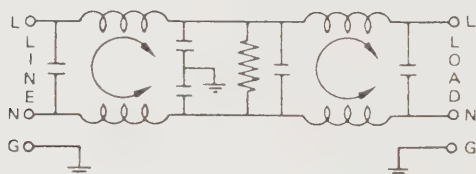


HPF  
565-3

### A. INTRODUCTION

1. TWO STAGE FILTERS PROVIDING HIGH PERFORMANCE IN SUPPRESSING BOTH LINE-TO-LINE AND LINE-TO-GROUND NOISE FOR LOW IMPEDANCE APPLICATIONS SUCH AS MOTORS AND SWITCHING POWER SUPPLIES.
2. OFFERS LOW LEAKAGE CURRENT AND HIGH INSERTION LOSS TO CONTROL PULSE, CONTINUOUS AND/OR INTERMITTENT INTERFERENCE.
3. IN A WIDE SELECTION OF TERMINATIONS AND CURRENT RATINGS.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

### C. ELECTRICAL SCHEMATIC



### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz:0.25mA @ 250VAC 50Hz:0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz								
	.01	.05	.10	.15	.50	1.0	5.0	10	30
2	7	8	30	40	60	65	55	50	40
3, 5A	7	8	30	40	60	65	55	50	40
3, 5A (S)	7	10	25	38	60	65	55	45	40
10A	3	10	15	30	60	65	50	45	40
20A	3	10	15	20	35	40	50	55	40

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

2	1	2	3	5	50	65	60	54	46
3, 5A	1	2	3	5	50	65	60	54	46
3, 5A (S)	1	5	6	10	65	70	70	60	50
10A	2	7	7	7	53	60	55	45	40
20A	0	9	9	7	55	70	50	60	40

### D. SERIES DIMENSIONS

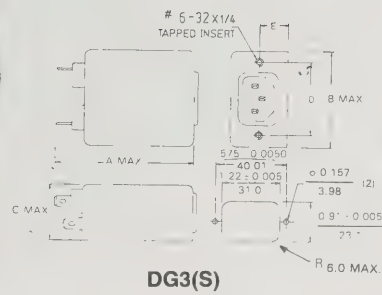
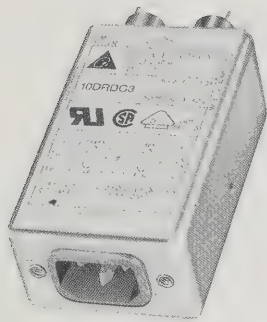
DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
02DRCG5	2A	CG5	3.25	1.82	1.15	2.38	2.75
02DRCW5		CW5	82.5	46.2	29.2	60.5	69.9
03DRCG5	3A	CG5	2.08	1.82	1.15	2.38	2.77
03DRCW5		CW5	52.8	46.2	29.2	60.5	70.4
03DRDG3S		DG3S	3.75	2.02	1.15	2.94	3.34
03DRDW3S		DW3S	95.2	51.3	29.2	74.7	84.8
05DRCG5		CG5	2.58	2.04	1.15	2.94	3.34
05DRCW5		CW5	65.5	51.8	29.2	74.7	84.8

DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
† 05DRDG3	5A	DG3	4.33	2.20	1.25	1.575	0.63
† 05DRDG3S		DG3S	110.0	55.9	31.8	40.01	16.0
† 05DRDW3S		DW3S	3.14	2.02	1.27	1.575	0.61
† 10DRDG3		DG3	79.8	51.3	32.3	40.01	15.5
10DRCG5	10A	CG5	2.55	2.02	1.27	1.575	0.61
10DRCW5		CW5	64.8	51.3	32.3	40.01	15.5
† 10DRDG3		DG3	3.75	2.02	1.52	2.94	3.34
† 20DRGG5		GG5	95.2	51.3	38.6	74.7	84.5
† 20DRGS5	20A	GS5	2.58	2.02	1.52	2.94	3.34
† 20DRGS5		GS5	65.5	51.3	38.6	74.7	84.5
† 20DRGS5		GS5	4.35	2.22	1.52	1.575	0.63

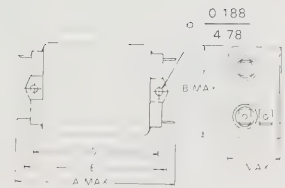
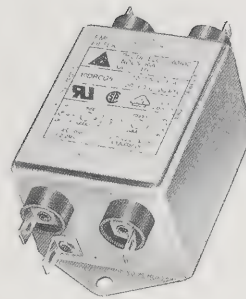
△ APPROVED TO VDE 0565 PART 3 OF 16A

† NON-STANDARD PART NUMBER

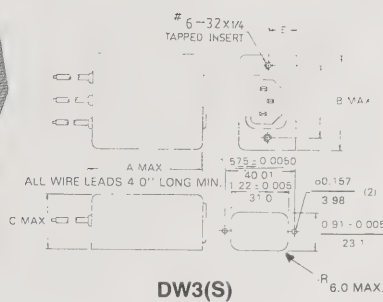
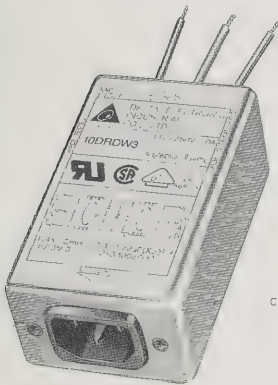
# E. MECHANICAL CONSTRUCTION



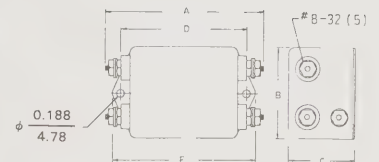
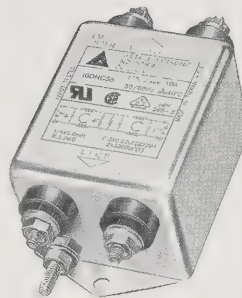
DG3(S)



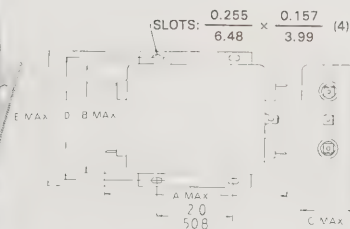
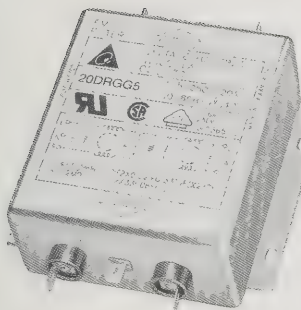
CG5



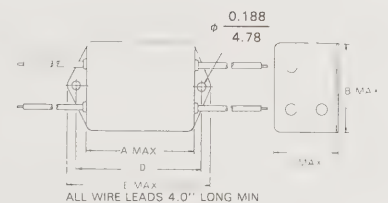
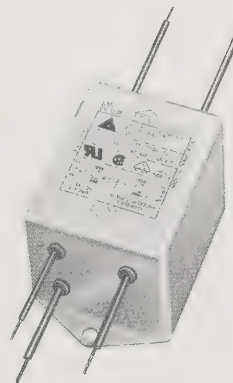
DW3(S)



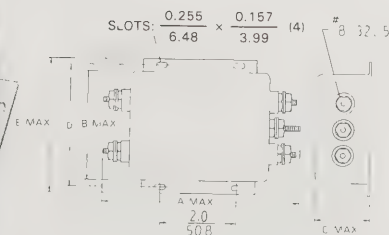
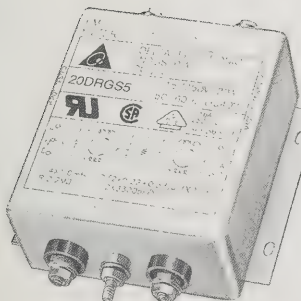
CS5



GG5



CW5



GS5

UNIT:  $\frac{\text{INCH}}{\text{mm}}$



# DP SERIES

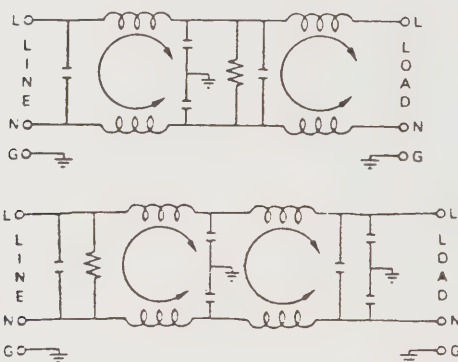
## SWITCHING TRANSIENT FILTERS



### A. INTRODUCTION

1. TWO STAGE FILTERS PROVIDE HIGH INSERTION LOSS FOR BOTH LINE-TO-LINE AND LINE-TO-GROUND EMISSIONS THROUGHOUT THE FREQUENCY RANGE.
2. PARTICULARLY EFFECTIVE IN REDUCING CONDUCTED NOISE TO ACCEPTABLE LIMITS FOR EQUIPMENT THAT MUST COMPLY WITH THE REQUIREMENTS OF VDE 0871, B-LEVEL & FCC PART 15J, CLASS B AND VERY LOW LEAKAGE CURRENT REQUIREMENTS.
3. A BROAD SELECTION OF TERMINATIONS IS AVAILABLE.
4. ALL PART NUMBERS ARE UL RECOGNIZED AND CSA CERTIFIED. MOST PART NUMBERS ARE VDE APPROVED.

### C. ELECTRICAL SCHEMATIC



06DPDW3 ONLY

### D. SERIES DIMENSIONS

	DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
				A	B	C	D	E
†	03DPCG5S	3A	CG5S	3.75	2.04	1.77	2.94	3.34
	95.2			51.8	45.0	74.7	84.8	
03DPCW5S	CW5S		2.52	2.02	1.77	2.94	3.34	
			64.0	51.3	45.0	74.7	84.8	
†	03DPDG3S		DG3S	3.14	2.04	1.77	1.575	0.63
				79.5	51.8	45.0	40.01	15.8

### B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)<sup>†</sup> LINE-TO-GROUND : 2250VDC LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION<sup>†</sup> LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz							
	.01	.05	.10	.15	.50	1.0	5.0	10 30
3A (S)	15	25	45	50	70	70	60	55 40
3A	15	30	50	60	70	70	65	55 40
6A	12	25	44	58	70	70	70	60 50
10A	14	26	40	58	70	70	70	70 30
* 06DPDW3	10	20	45	60	70	70	65	70 60

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

3A (S)	0	6	25	35	48	55	55	55	45
3A	0	10	30	36	55	60	55	55	45
6A	5	10	22	40	65	65	70	70	50
10A	5	10	28	45	65	65	70	70	50
* 06DPDW3		5	30	40	60	60	60	60	60

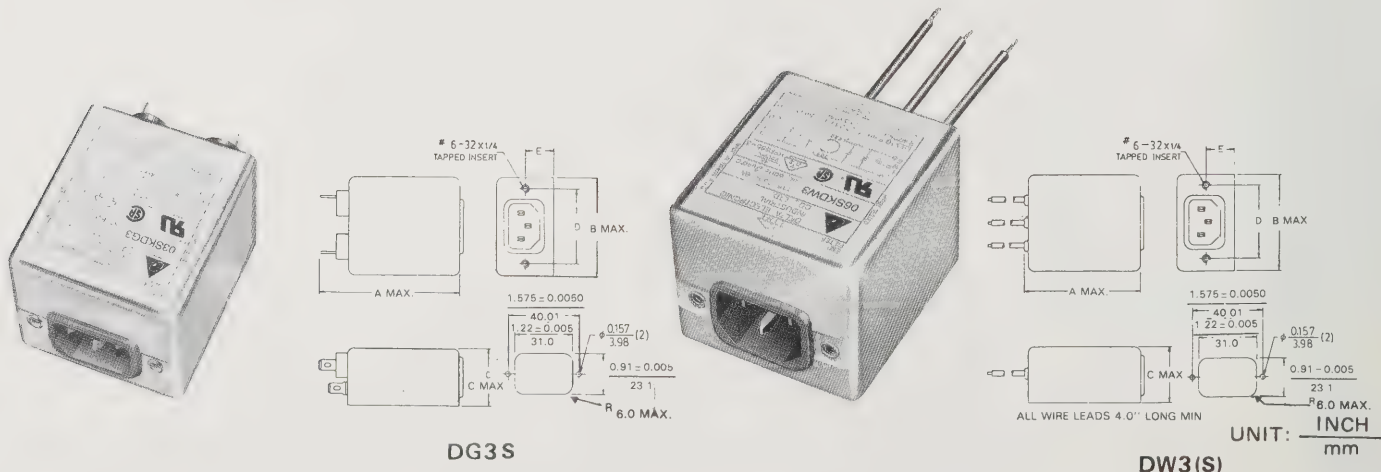
\* MAXIMUM LEAKAGE CURRENT:

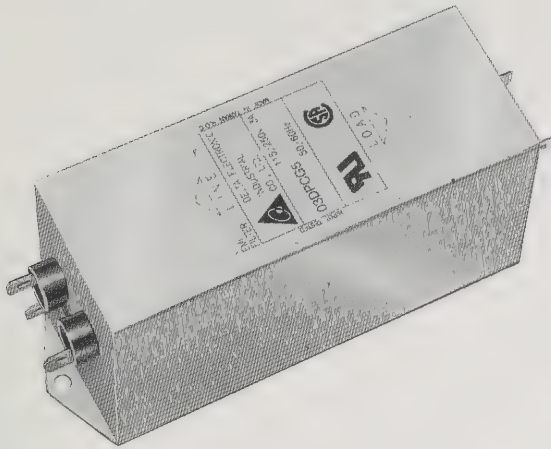
a 115VAC 60HZ: 0.5 mA

b 250VAC 50HZ: 1.0 mA

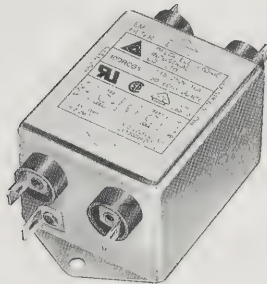
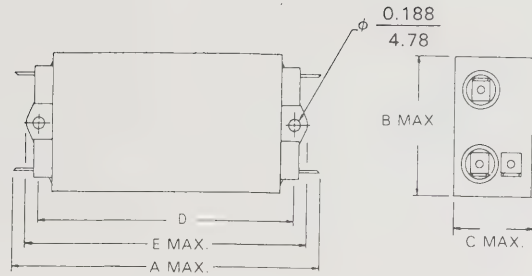
DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
03DPDW3S	3A	DW3S	2.55	2.04	1.77	1.575	0.63
			64.8	51.8	44.9	40.01	15.8
06DPCG5	6A	CG5	6.50	2.04	2.27	5.63	6.04
			165.1	51.8	70.4	143.0	153.4
06DPCW5		CW5	5.27	2.04	2.27	5.63	6.04
			133.9	51.8	70.4	143.0	153.4
10DPCG5	10A	CG5	6.50	2.04	2.77	5.63	6.04
			165.1	51.8	70.4	143.0	153.4
06DPDW3	6A	DW3	3.10	2.00	1.77	1.575	0.62
			78.7	51.0	44.9	40.01	15.7

### E. ELECTRICAL SCHEMATIC

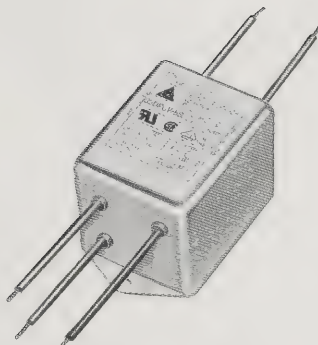
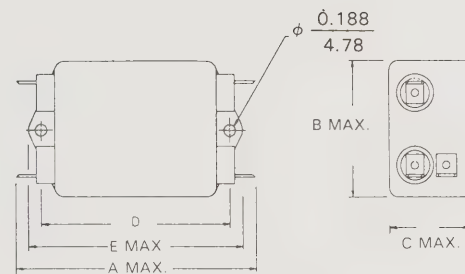




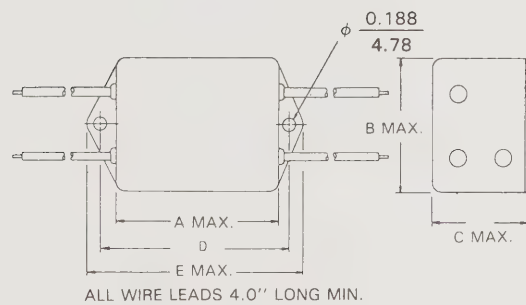
CG5



CG5S



CW5S



UNIT:  $\frac{\text{INCH}}{\text{mm}}$





# SK SERIES

GENERAL PURPOSE FILTERS

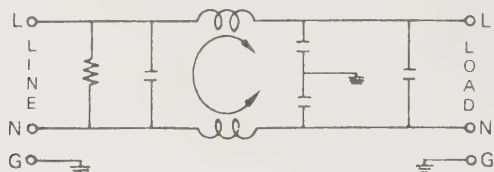


HPF  
565-3

## A. INTRODUCTION

1. EFFECTIVELY CONTROL EMI SUPPRESSION OF BOTH LINE-TO-LINE AND LINE-TO-GROUND NOISE.
2. WELL SUITED FOR USE IN COMPUTERS, PERIPHERAL EQUIPMENT AND INDUSTRIAL APPLICATIONS WHERE PULSE, CONTINUOUS AND/OR INTERMITTENT EMI NOISE IS PRESENT.
3. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE APPROVED.

## C. ELECTRICAL SCHEMATIC

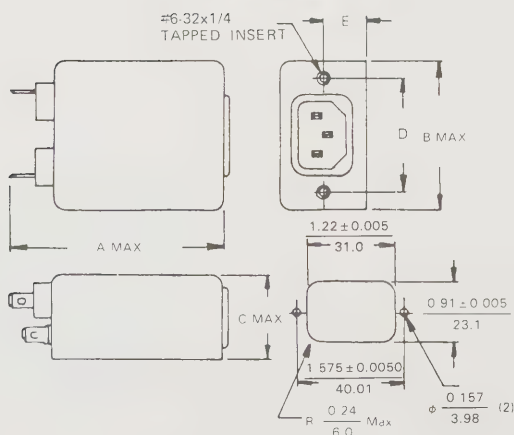
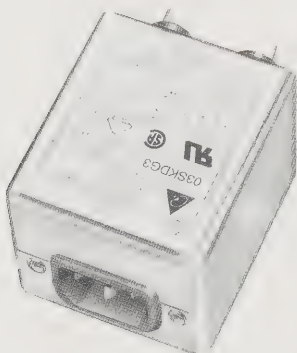


## D. SERIES DIMENSIONS

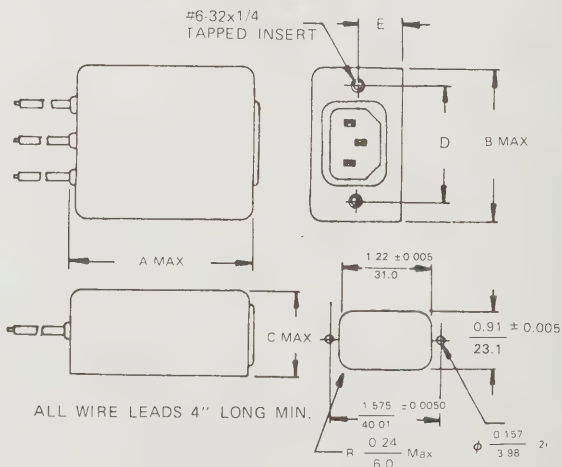
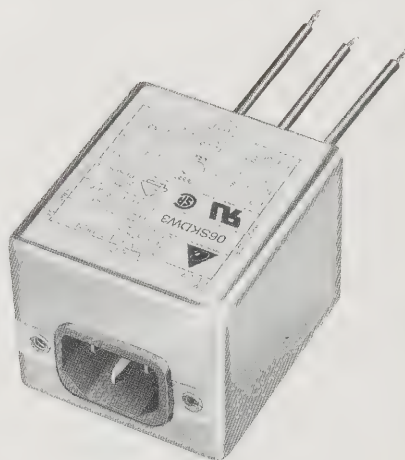
DELTA PART NO.	CURRENT RATING	STYLE	DIMENSIONS IN INCHES/mm				
			A	B	C	D	E
† 03SKDG3	3A	DG3	3.22	2.24	1.54	1.575	0.63
			81.8	56.9	39.1	40.01	16.0
† 03SKDW3		DW3	2.63	2.24	1.54	1.575	0.63
			66.5	56.9	39.1	40.01	16.0
† *06SKDG3	6A	DG3	3.22	2.24	1.77	1.575	0.63
			81.8	56.9	44.9	40.01	16.0
† *06SKDW3		DW3	2.63	2.24	1.77	1.575	0.63
			66.5	56.9	44.9	40.01	16.0

\* VDE APPROVED 4A/250VAC

## E. MECHANICAL CONSTRUCTION



DG3



DW3

UNIT: INCH  
mm

† NON-STANDARD PART NUMBER

## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz: 0.25mA @ 250VAC 50Hz: 0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND : 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE : 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

COMMON MODE (L-G) IN 50 OHM SYSTEM

CURRENT RATING	FREQUENCY-MHz							
	.01	.05	.10	.15	.50	1.0	10	30
3A	15	25	30	30	35	40	45	48
6A	12	22	30	35	40	40	40	35

DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

3A	1	2	25	35	45	50	45	55	50
6A	0	2	15	25	40	45	38	50	50

# **PC MOUNT FILTERS**



## A. INTRODUCTION

1. DIRECT PC BOARD MOUNTING FOR EASY INSTALLATION AND SPACE SAVING. BOTH VERTICAL AND HORIZONTAL TYPES ARE AVAILABLE FOR MORE FLEXIBLE BOARD DESIGN.
2. DESIGNED AS A GENERAL PURPOSE FILTER WITH AN IEC CONNECTOR PROVIDING EFFECTIVE EMI SUPPRESSION OF LINE-TO-GROUND NOISE.
3. COMPACT AND RELIABLE AT LOW COST.
4. ALL PART NUMBERS ARE UL RECOGNIZED, CSA CERTIFIED AND VDE SEV APPROVED.

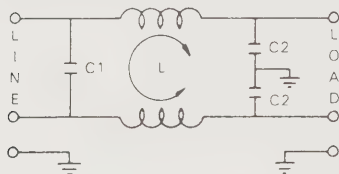
## B. SPECIFICATIONS

1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 115VAC 60Hz:0.25mA @ 250VAC 50Hz:0.45mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 2250VDC  
LINE-TO-LINE : 1450VDC
3. OPERATING FREQUENCY: 50-60Hz
4. RATED VOLTAGE: 115/250VAC
5. MINIMUM INSERTION LOSS IN dB

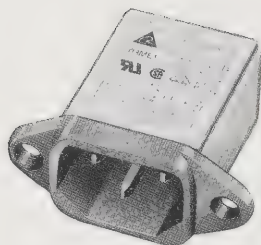
### COMMON MODE (L-G) IN 50 OHM SYSTEM

TYPE	CURRENT RATING	FREQUENCY - MHz					
		.15	.50	1.0	5.0	10	30
01ME1	1A	25	35	40	50	52	50
03ME1	3A	20	30	35	40	40	40
† 06ME1	6A	12	22	30	45	50	55
10ME1	10A	5	15	20	37	45	50
† 01ME2	1A	27	37	42	44	45	40
03ME2	3A	20	28	32	45	50	50
† 06ME2	6A	12	18	20	35	40	50
† 10ME2	10A	5	10	12	28	30	45
01ME3	1A	28	40	45	45	45	45
03ME3	3A	22	30	35	45	45	48
06ME3	6A	12	20	25	40	45	45
10ME3	10A	4	10	15	30	38	45

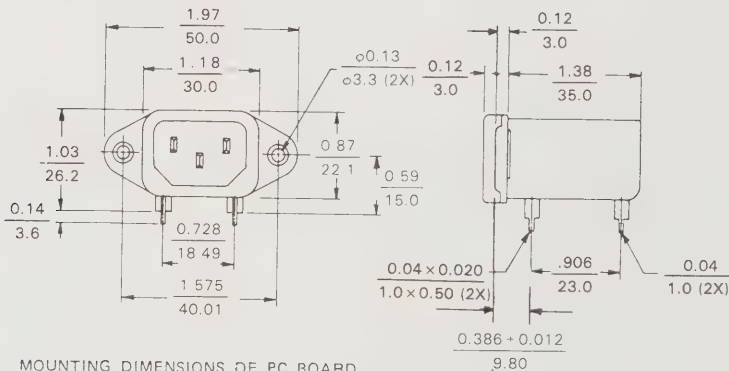
## C. ELECTRICAL SCHEMATIC



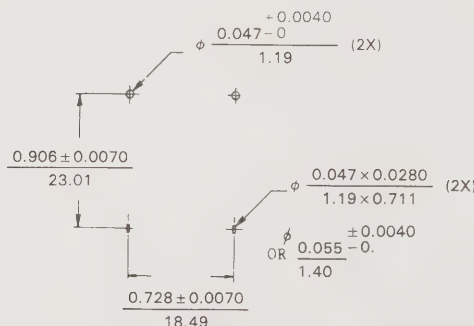
## D. MECHANICAL CONSTRUCTION



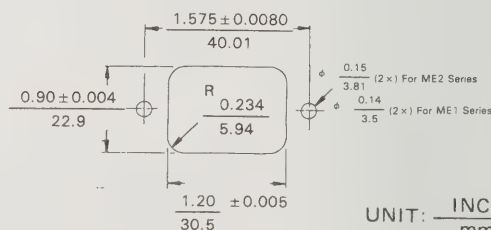
ME1



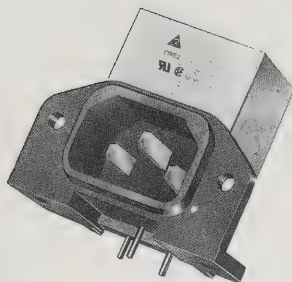
MOUNTING DIMENSIONS OF PC BOARD



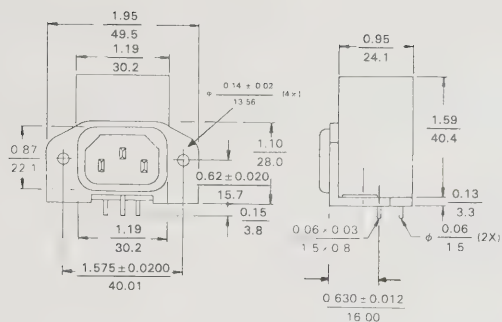
SUGGESTED CUTOUT  
(MOUNTING DIMENSIONS OF SOCKET)



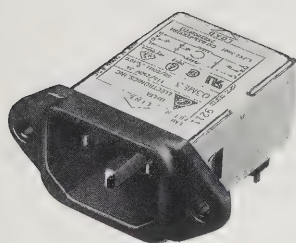
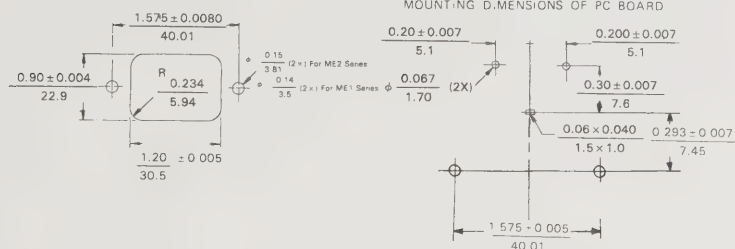
UNIT: INCH  
mm



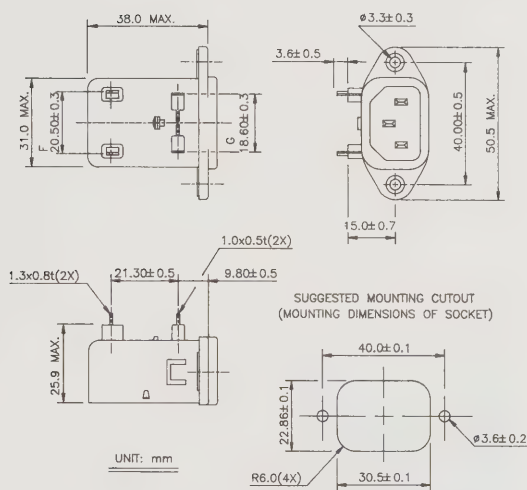
ME2



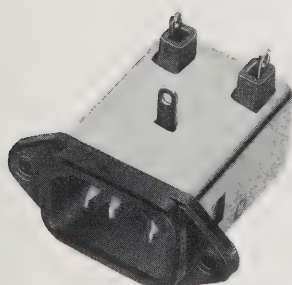
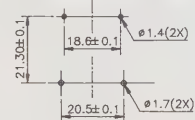
SUGGESTED CUTOUT  
(MOUNTING DIMENSIONS OF SOCKET)



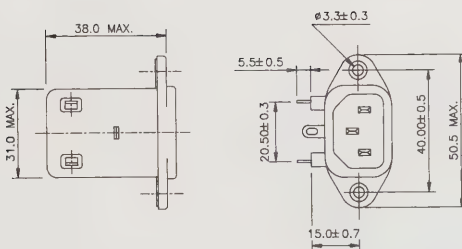
ME3



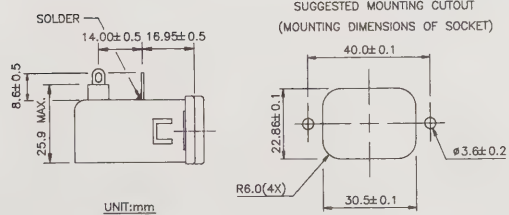
MOUNTING DIMENSIONS OF PC BOARD



ME3(S)



SUGGESTED MOUNTING CUTOUT  
(MOUNTING DIMENSIONS OF SOCKET)

UNIT:  $\frac{\text{INCH}}{\text{mm}}$



# DELTA MK SERIES

## HIGH PERFORMANCE PC BOARD MOUNTING FILTERS

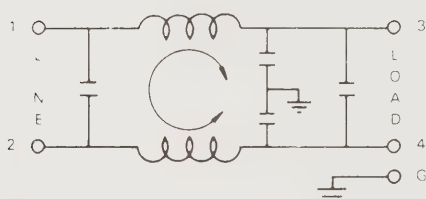


HPF  
565-3

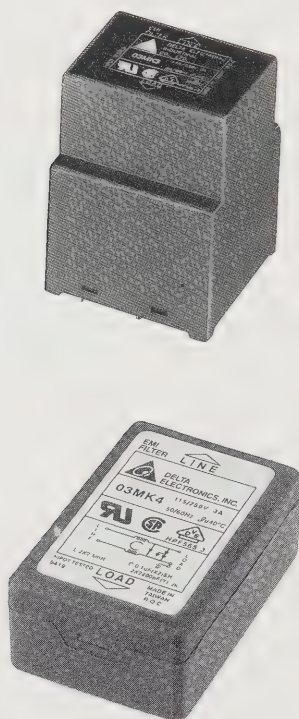
### A. INTRODUCTION

1. Direct PC board mounting for easy installation.
2. Reduces costs, increases reliability, and saves space by 50% over discrete components.
3. High performance noise attenuation for low frequency applications such as switching power supplies.
4. Outer plastic casing allows higher mounting densities, while inner metal shield minimizes radiation and magnetic flux interference.
5. All part numbers are UL recognized, CSA certified and VDE approved.

### C. ELECTRICAL SCHEMATIC



### D. MECHANICAL CONSTRUCTION



### B. SPECIFICATIONS

1. Maximum leakage current each  
line-to-ground @ 115VAC 60Hz: 0.25mA  
@ 250VAC 50Hz: 0.45mA
2. Hipot rating (one minute)  
line-to-ground: 2250VDC  
line-to-line: 1450VDC
3. Operating frequency: 50-60Hz
4. Rated voltage: 115/250VAC
5. Minimum insertion loss in dB

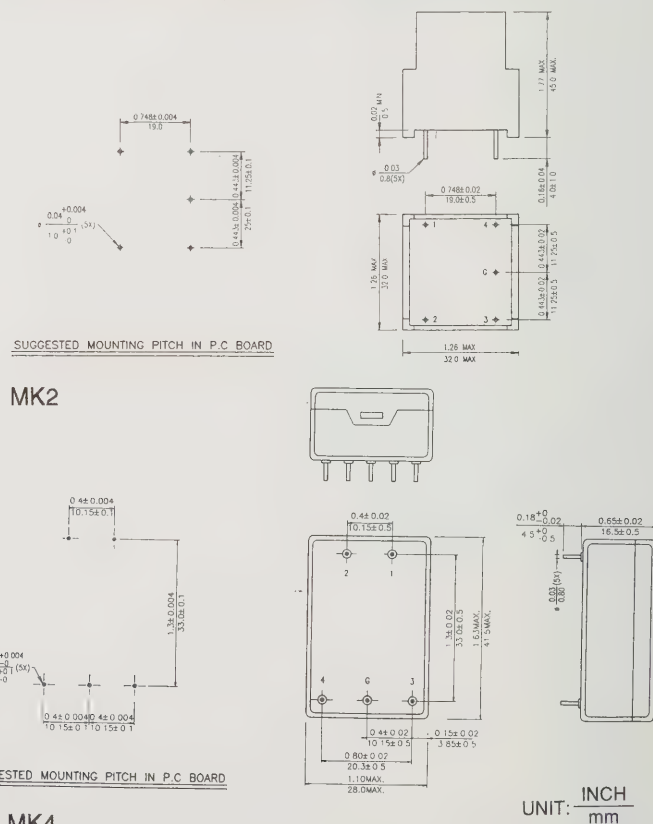
#### COMMON MODE (L-G) IN 50 OHM SYSTEM

TYPE	CURRENT RATING	FREQUENCY-MHz					
		0.15	0.50	1.0	5.0	10	30
01MK2	1A	40	45	40	40	40	33
02MK2	2A	35	45	40	40	40	32
03MK2*	3A	30	45	40	40	40	32
01MK4	1A	30	50	45	50	35	20
03MK4	3A	20	30	45	48	45	20
06MK4	6A	15	25	30	50	40	20

#### DIFFERENTIAL MODE (L-L) IN 50 OHM SYSTEM

01MK2	1A	30	44	40	40	42	31
02MK2	2A	20	44	40	40	42	31
03MK2*	3A	20	44	40	40	42	31
01MK4	1A	10	25	40	45	45	20
03MK4	3A	7	15	30	35	35	28
06MK4	6A	8	18	25	30	30	25

\* VDE APPROVED 2A/250VAC



## **3 PHASE FILTERS**



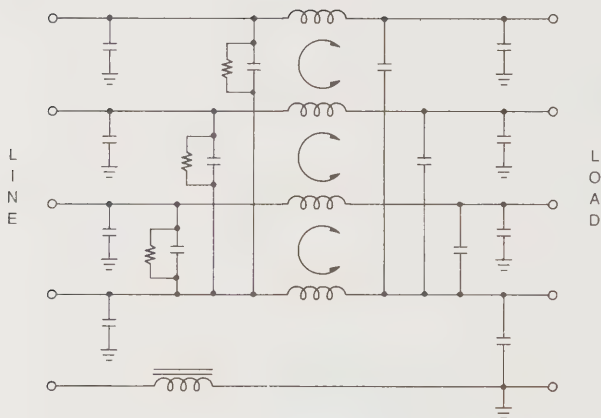
#### A. INTRODUCTION

1. A HIGH PERFORMANCE WITH "Y" SCHEMATIC FILTER PROVIDING UNDER 0.05 ~ 30MHz FREQUENCY BOTH IN LINE-TO-LINE & LINE-TO-GROUND.
2. BOTH USED IN "Δ" & "Y" SYSTEM.
3. GROUND CHOKES IS ADDED.
4. MOUNTING EAR (OPTIONAL).
5. ALL PART NUMBERS, UL/CSA IN PROCESS.
6. APPLICATION: ELECTRIC EQUIPMENT, UPS, COPY MACHINE, AUTOMATION EQUIPMENT, ROBOT.

#### B. SPECIFICATIONS

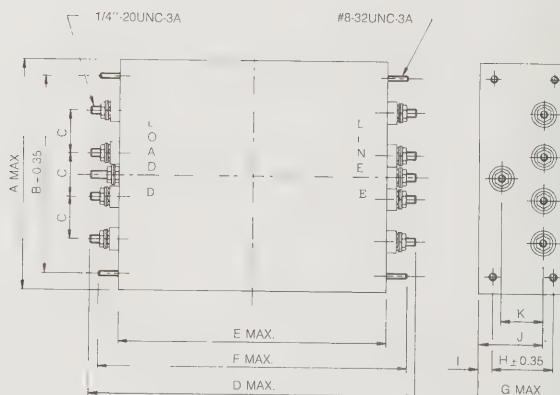
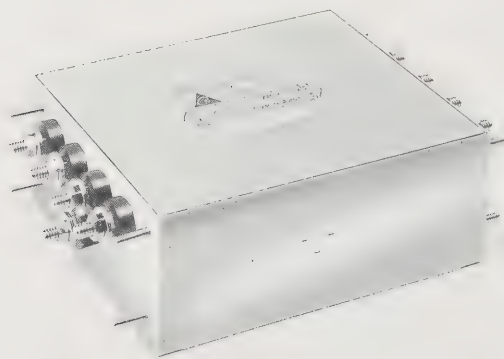
1. MAXIMUM LEAKAGE CURRENT EACH  
LINE-TO-GROUND @ 1150V, 60Hz: 1.2mA  
@ 250V, 50Hz: 3mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 1500 VAC  
LINE-TO-LINE : 1450 VDC
3. OPERATING FREQUENCY: 50/60Hz
4. RATED VOLTAGE:  
LINE-TO-LINE : 440 VAC  
LINE-TO-NEUTRAL: 250 VAC
5. TEMPERATURE RANGE: 25 ~ +85°C
6. MINIMUM INSERTION LOSS IN dB: IN 50 OHM SYSTEM.

#### C. SCHEMATIC



FREQ. (MHz)		0.05	0.15	0.5	1.0	5.0	10	30
20TYS10	COMM. MODE	2%	4%	50	50	55	55	45
	DIFF. MODE	15	45	60	60	55	55	45
30TYS10	COMM. MODE	20	30	40	40	45	45	35
	DIFF. MODE	15	4	55	55	45	45	40
60TYS10	COMM. MODE	6	15	30	30	30	30	30
	DIFF. MODE	10	25	45	45	35	35	30

#### D. PHYSICAL DIMENSIONS



TYPE	DIM	A	B	C	D	E	F	G	H	I	J	K
20TYS10		142.0	117.0	25.0	225.0	167.0	197.0	65.0	38.0	13.0	46.0	22.4
30TYS10		142.0	117.0	25.0	225.0	167.0	197.0	65.0	38.0	13.0	46.0	22.4
60TYS10		142.0	117.0	25.0	225.0	167.0	197.0	65.0	38.0	13.0	46.0	22.4

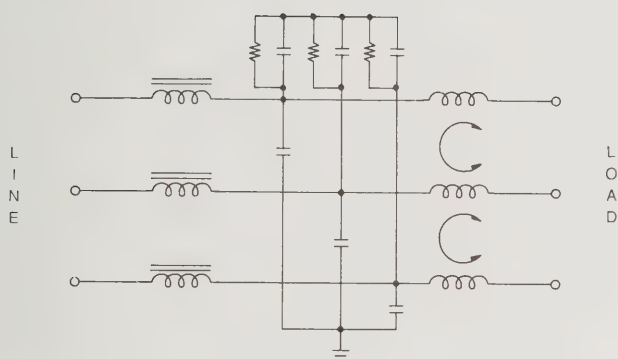
#### A. INTRODUCTION

1. A HIGH PERFORMANCE CAN PROVIDE EFFECTIVELY SUPPRESS EMI NOISE IN LINE-TO-LINE AT HIGH FREQUENCY.
2. USED IN 3 PHASE 3 WIRE SYSTEM.
3. BLEEDER RESISTOR IS ADDED.
4. ALL PART NUMBERS UL/CSA IN PROCESS.
5. APPLICATION: ELECTRIC EQUIPMENT, UPS, COPY MACHINE, AUTOMATION EQUIPMENT, ROBOT.

#### B. SPECIFICATIONS

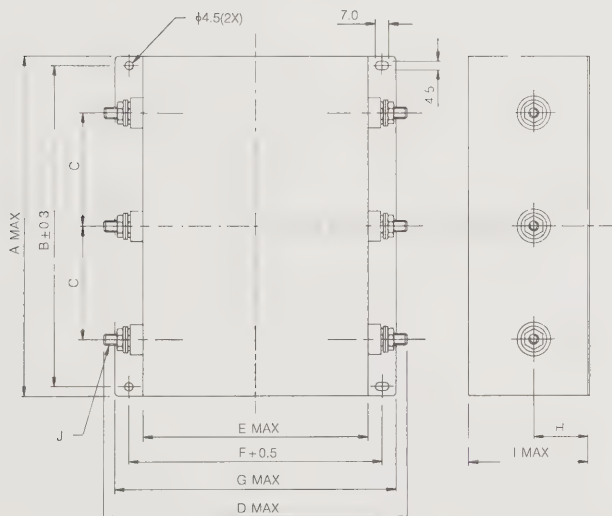
1. MAXIMUM LEAKAGE CURRENT EACH LINE-TO-GROUND @ 250V, 60Hz: 1mA
2. HIPOT RATING (ONE MINUTE)  
LINE-TO-GROUND: 1500 VAC  
LINE-TO-LINE : 1450 VDC
3. OPERATING FREQUENCY: 50/60Hz
4. RATED VOLTAGE:  
LINE-TO-LINE : 440 VAC
5. TEMPERATURE RANGE:  $-25 \sim +85^{\circ}\text{C}$
6. MINIMUM INSERTION LOSS IN dB: IN 50 OHM SYSTEM.

#### C. SCHEMATIC



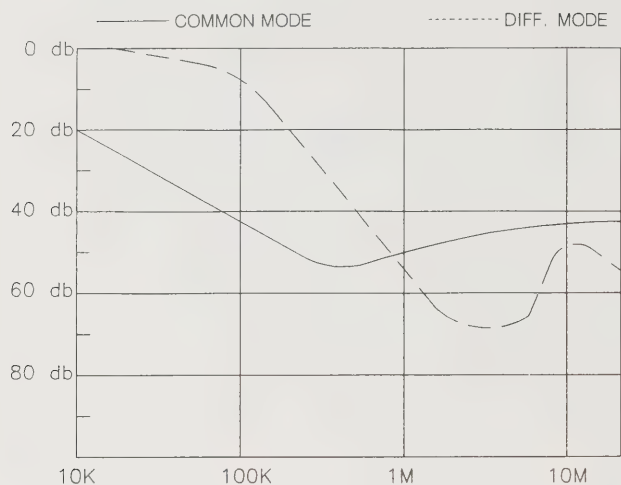
FREQ (MHz)	15	30	45	60	75	90
10TDS6D	COMM MODE 5	5	40	30	4	30
	DIFF MODE 2	2	15	15	25	25
20TDS6D	COMM MODE 20	20	1	40	30	1
	DIFF MODE 1	1	10	1	30	1
30TDS6D	COMM MODE 10	10	10	1	1	1
	DIFF MODE 1	1	2	1	1	1
40TDS6D	COMM MODE 10	10	1	15	20	30
	DIFF MODE 1	1	1	15	4	20
50TDS6D	COMM MODE 10	10	1	10	10	30
	DIFF MODE 1	1	1	10	10	15

#### D. PHYSICAL DIMENSIONS

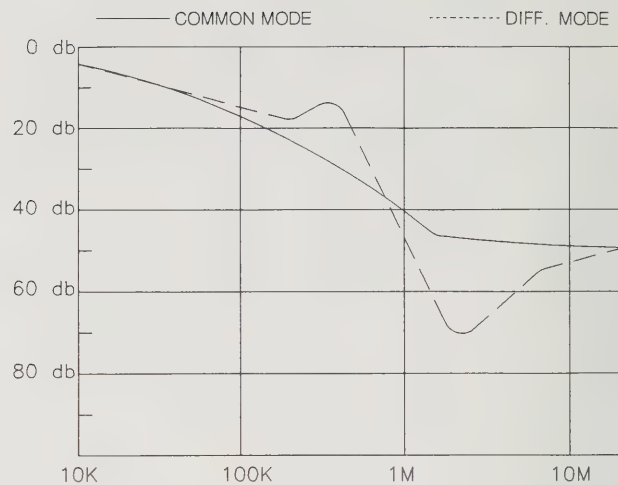


TYPE	DIM	A	B	C	D	E	F	G	H	I	J
10TDS6D		182.0	170.0	60.0	170.0	122.0	135.0	152.0	35.0	67.0	M4X0.7
20TDS6D		182.0	170.0	60.0	170.0	122.0	135.0	152.0	35.0	67.0	M6X1.0
30TDS6D		182.0	170.0	60.0	170.0	122.0	135.0	152.0	35.0	67.0	
40TDS6D		182.0	160.0	50.0	260.0	202.0	220.0	242.0	40.0	82.0	
50TDS6D		182.0	160.0	50.0	260.0	202.0	220.0	242.0	40.0	82.0	

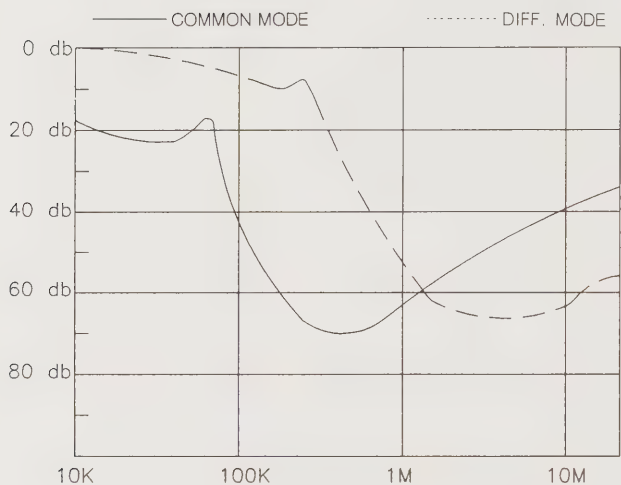
# INSERTION LOSS (TYPICAL)



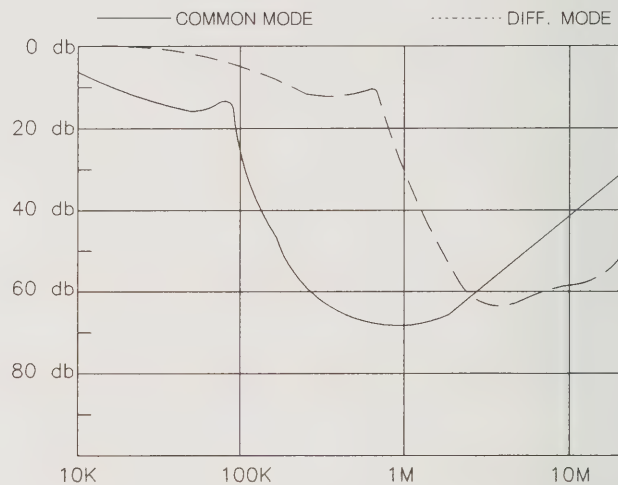
O3AK2D



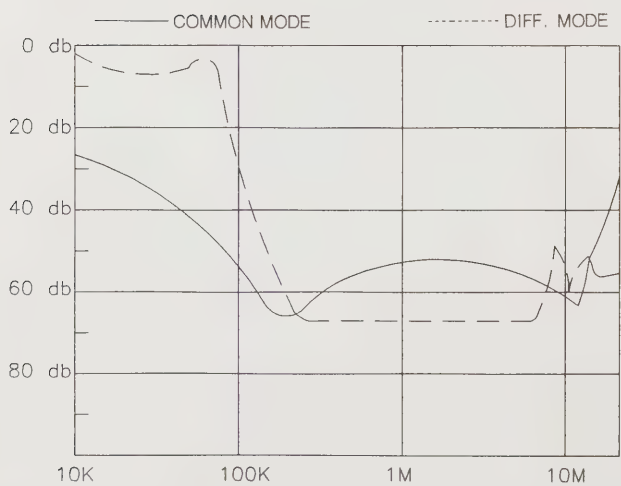
O6AK2D



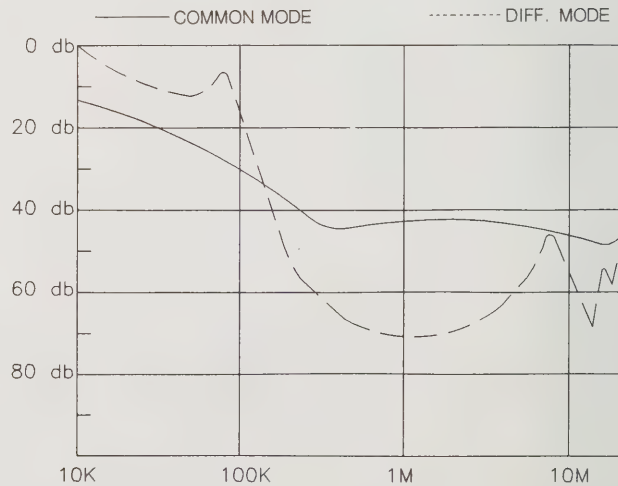
O3AR2D



O6AR2D

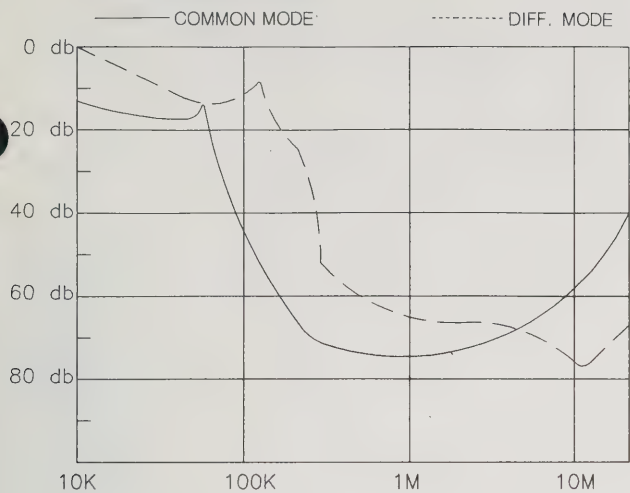


O3CK2

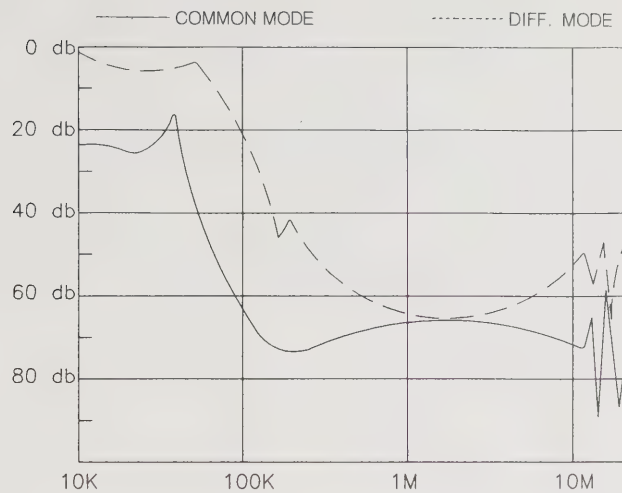


O6CK2

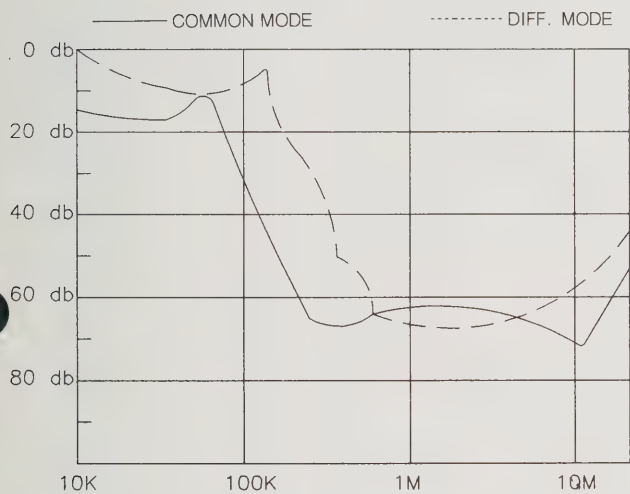




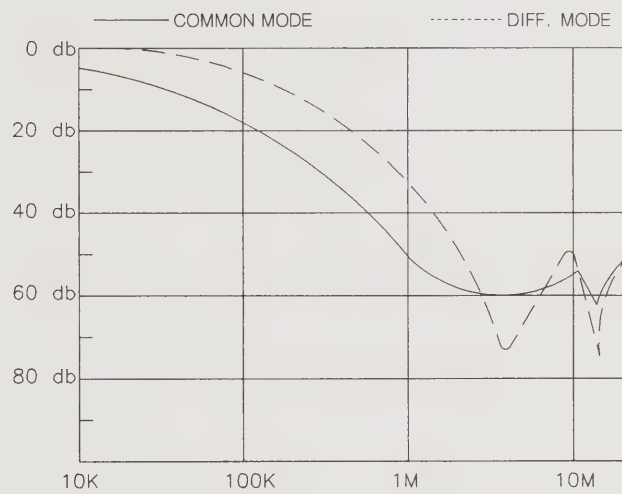
10CK2



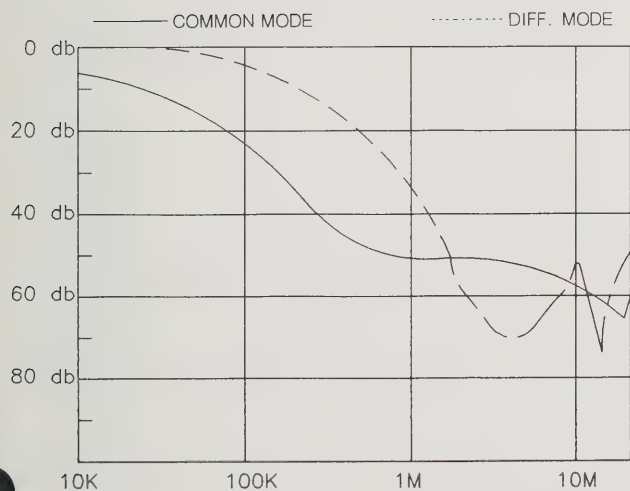
O3CR2



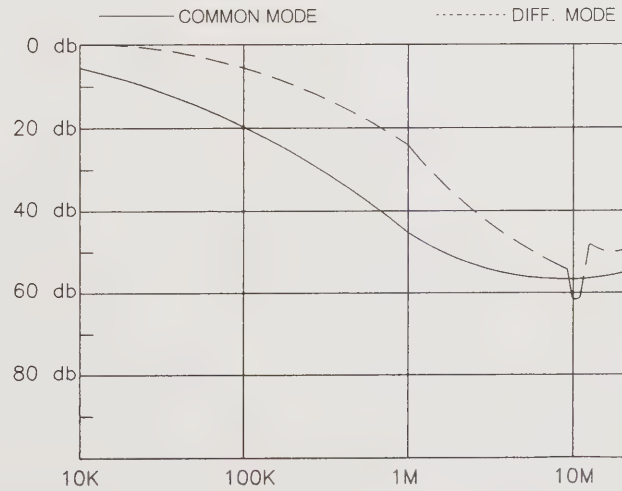
O6CR2



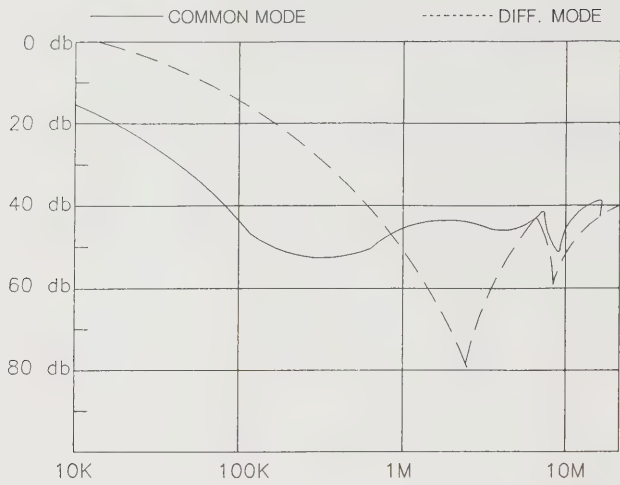
O2BEEG3H



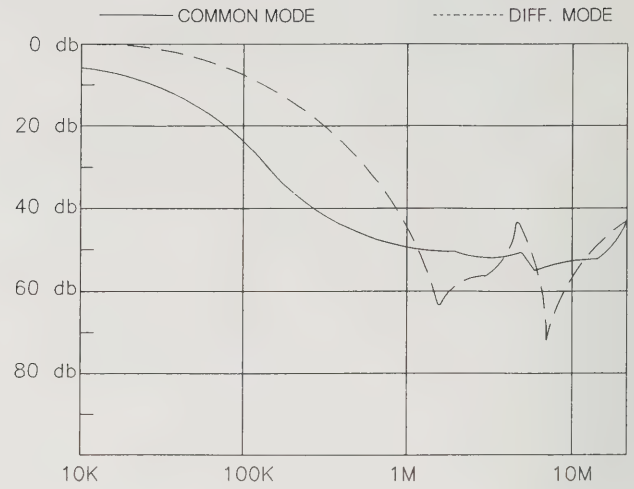
O4BEEG3H



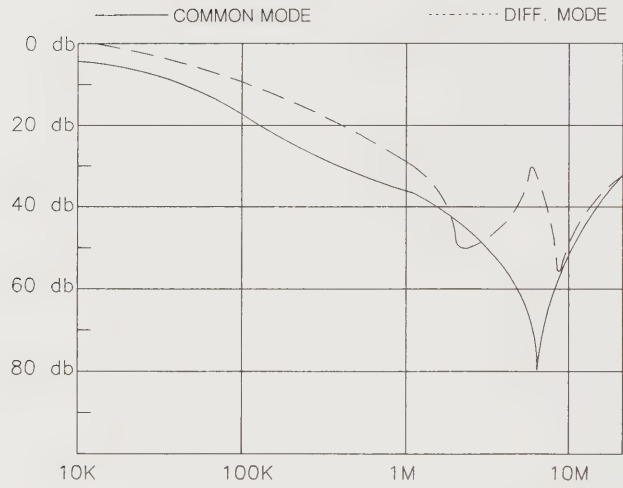
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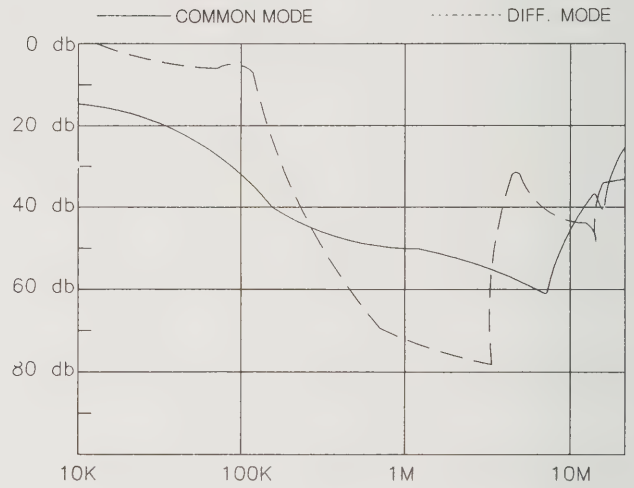
O3EB3



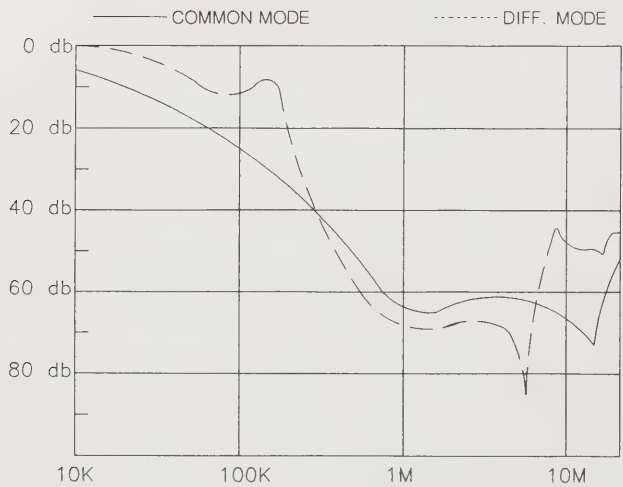
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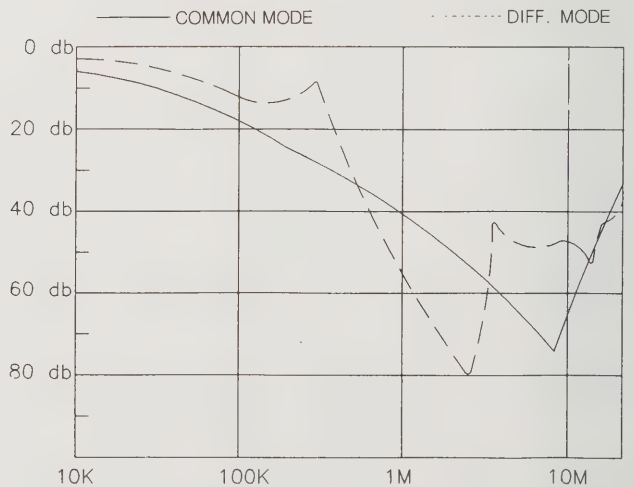
10EB3



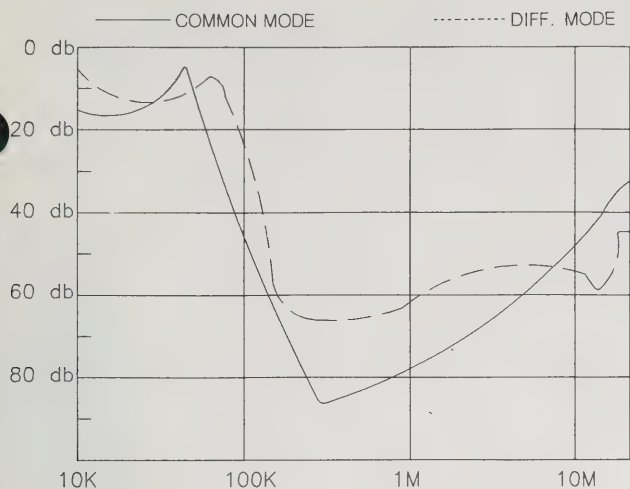
O3EK3



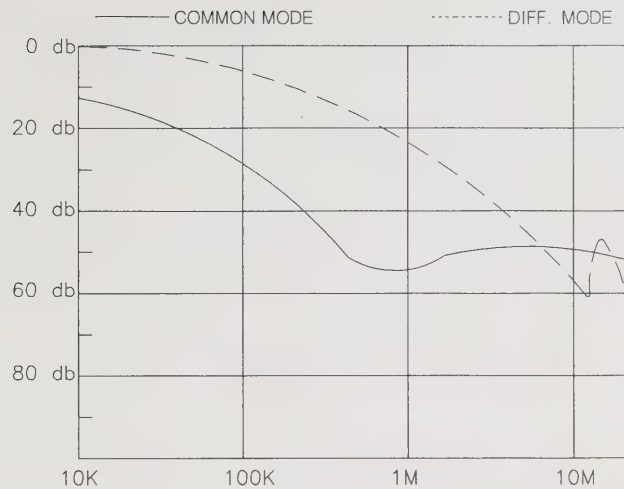
O6EK3



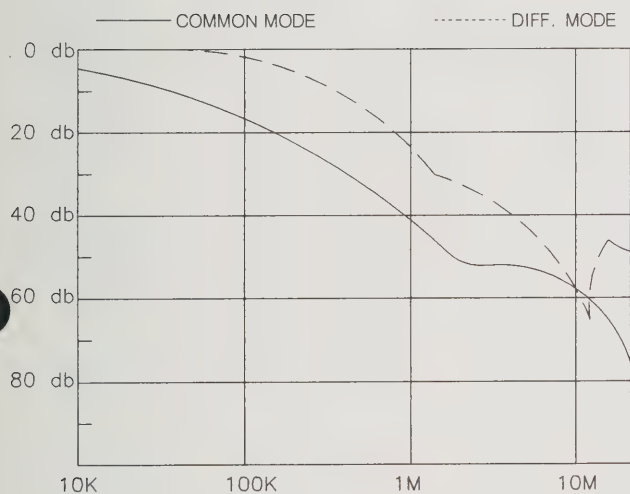
10EK3



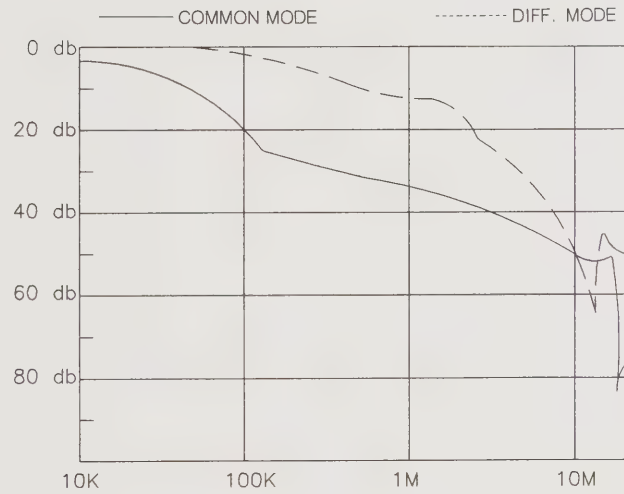
05BRDW3



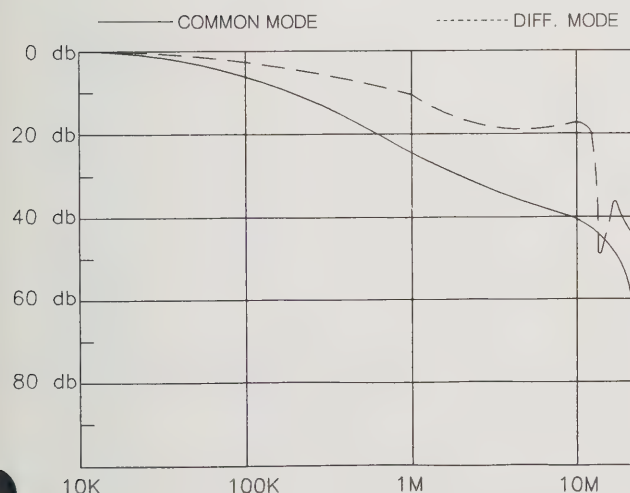
O1DEEG3B



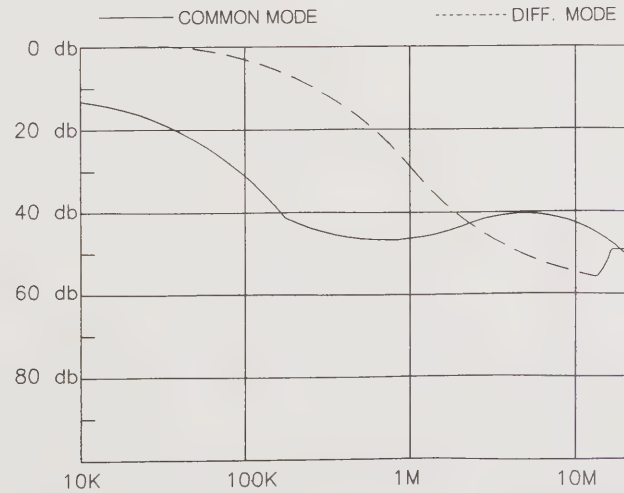
O3DEEG3B



O6DEEG3B

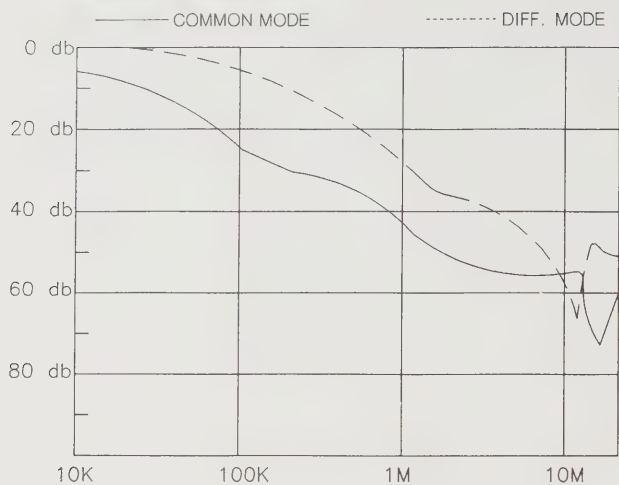


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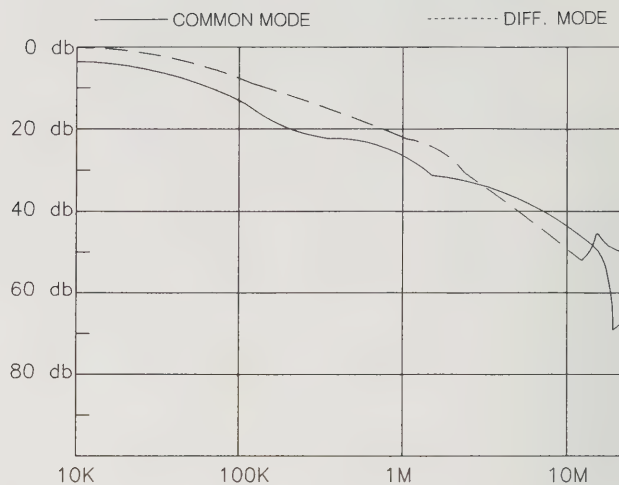


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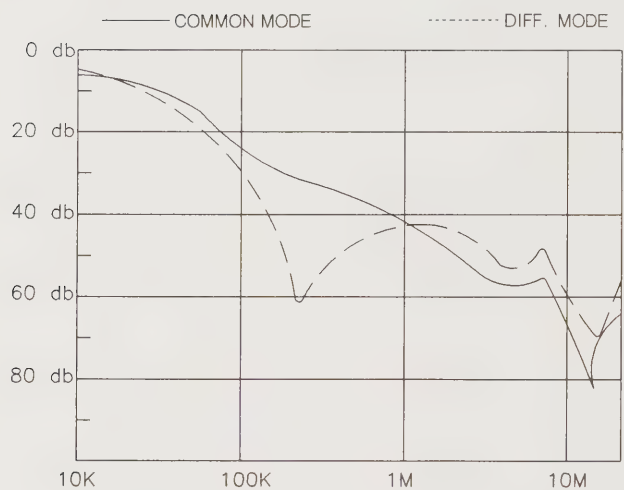




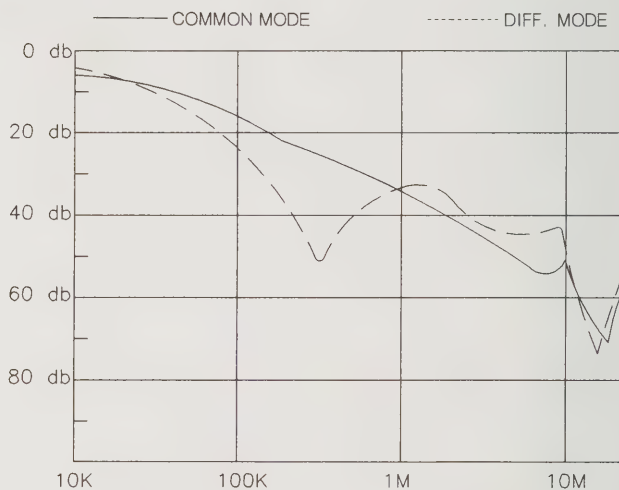
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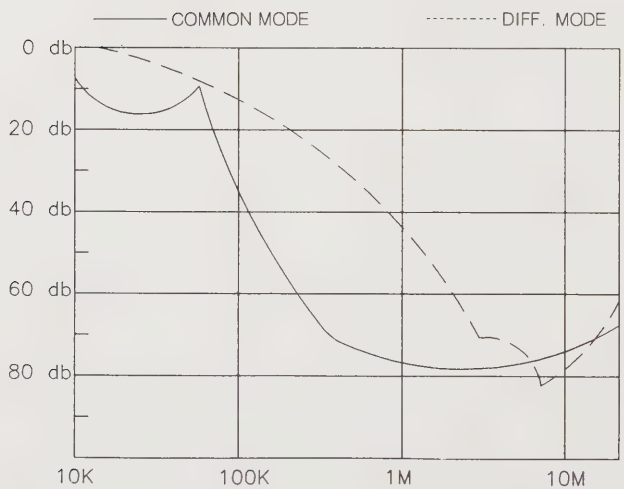
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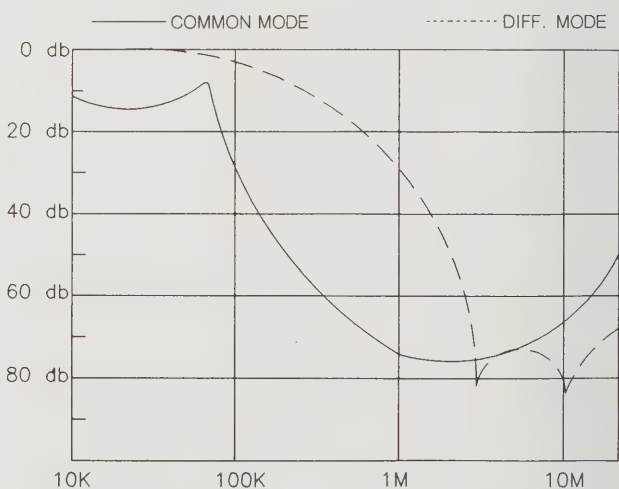
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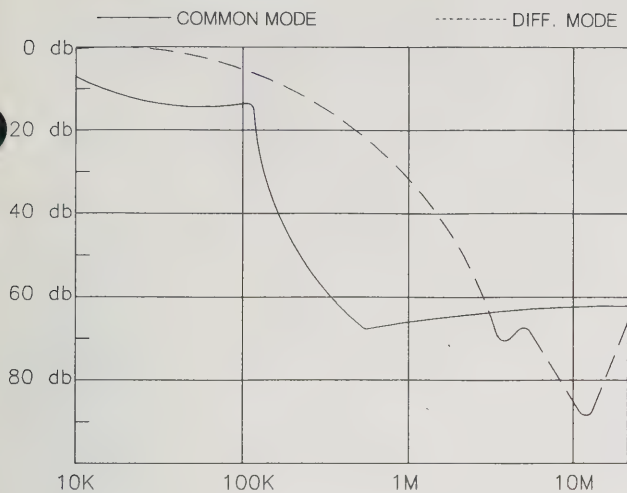
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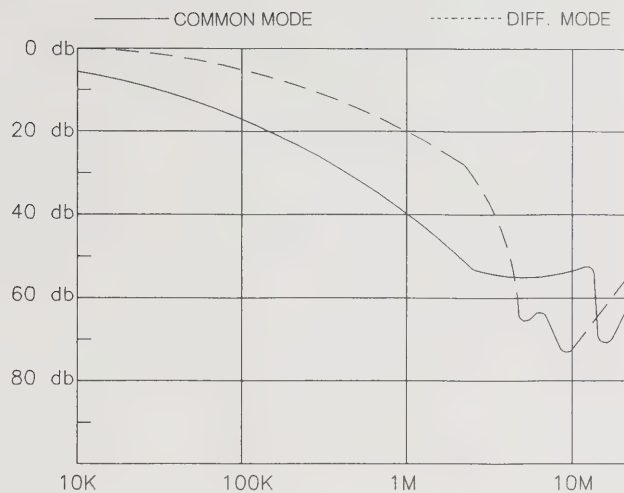
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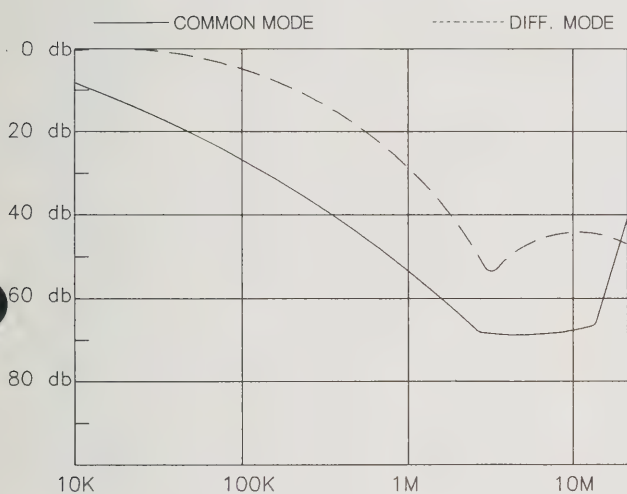
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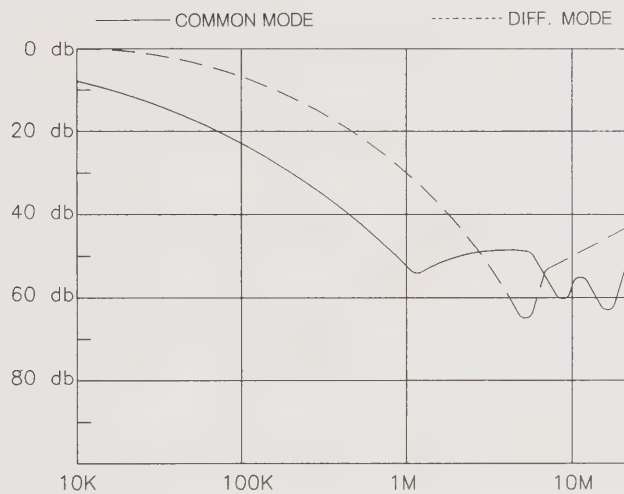
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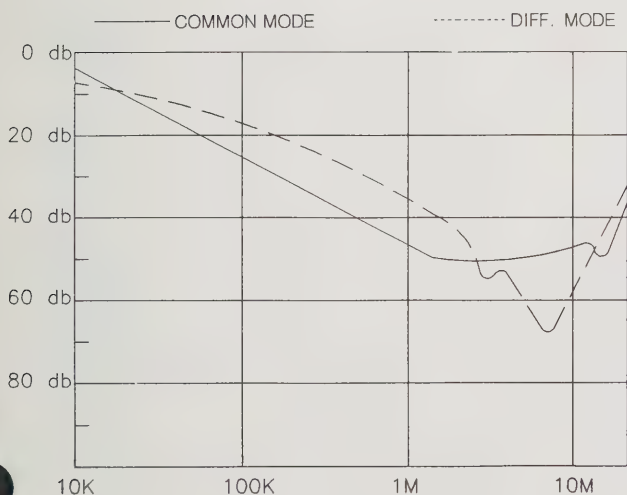
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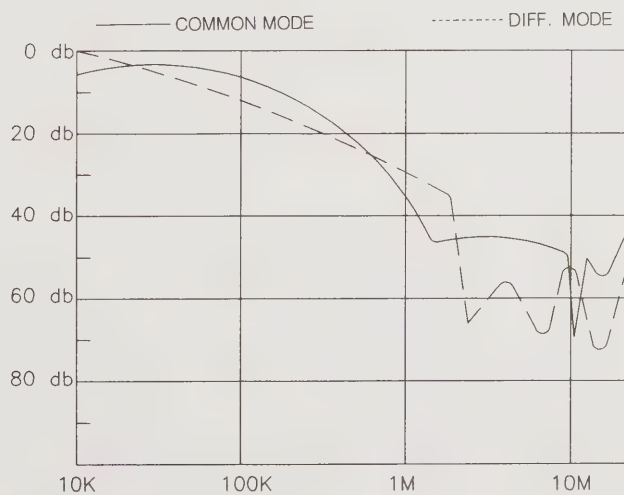
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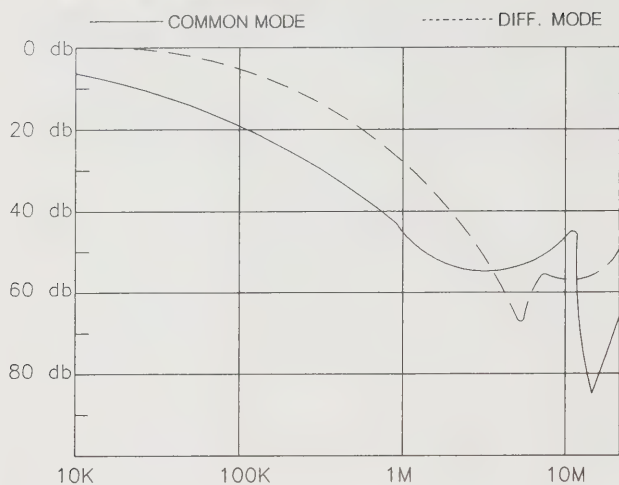
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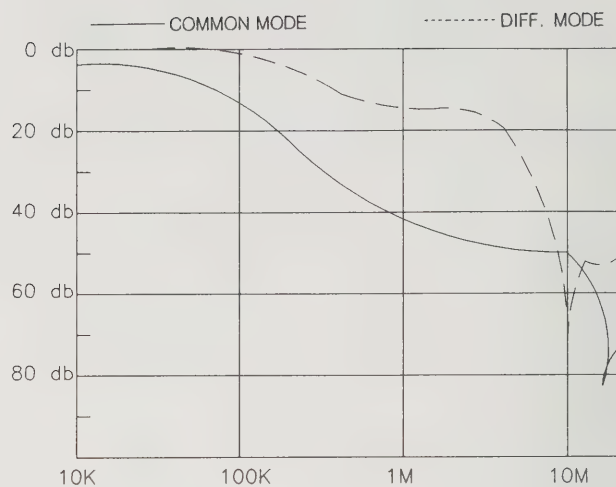
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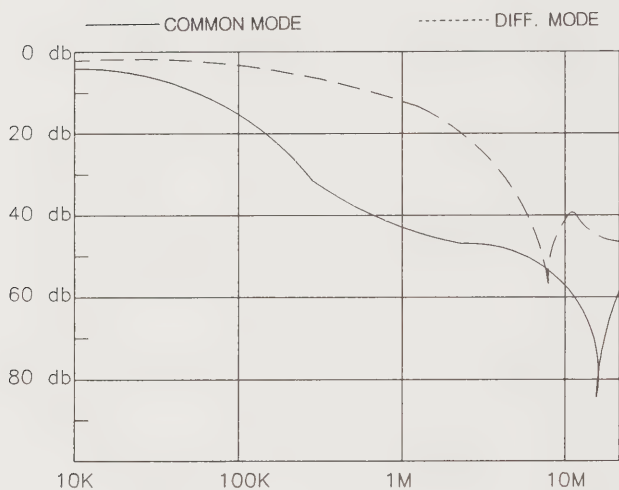
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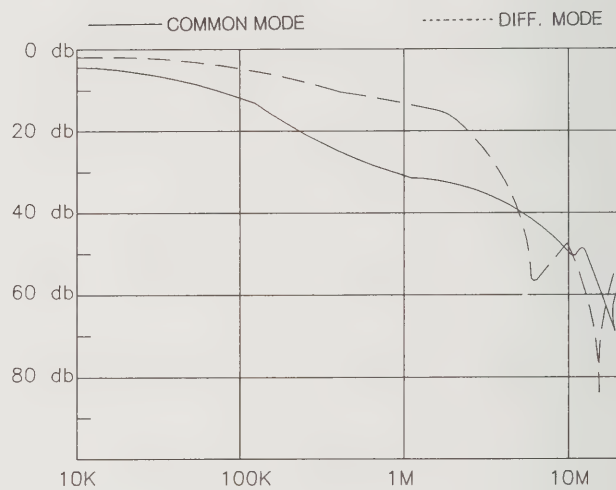
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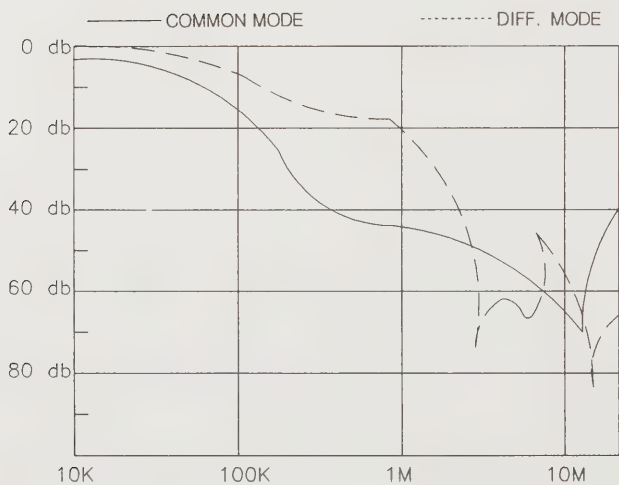
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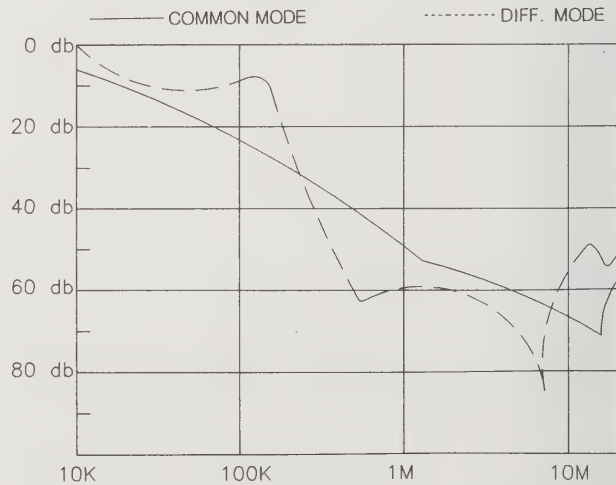
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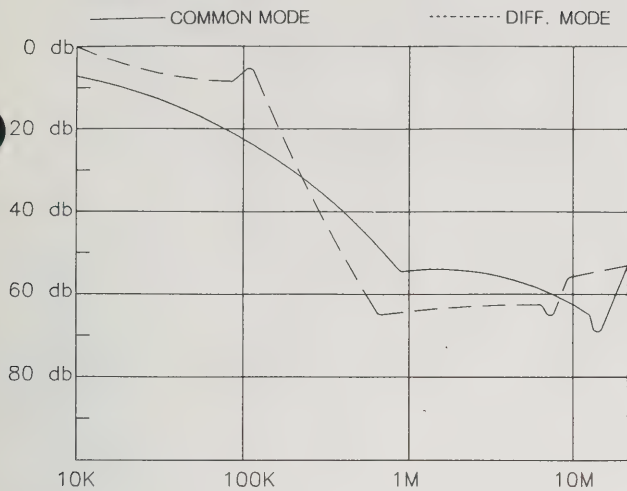


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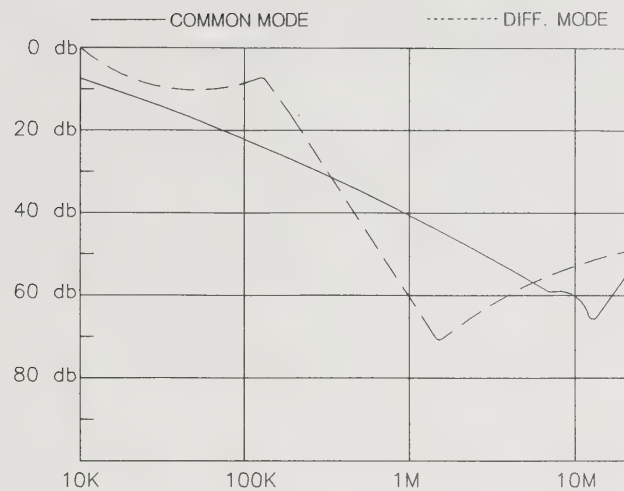


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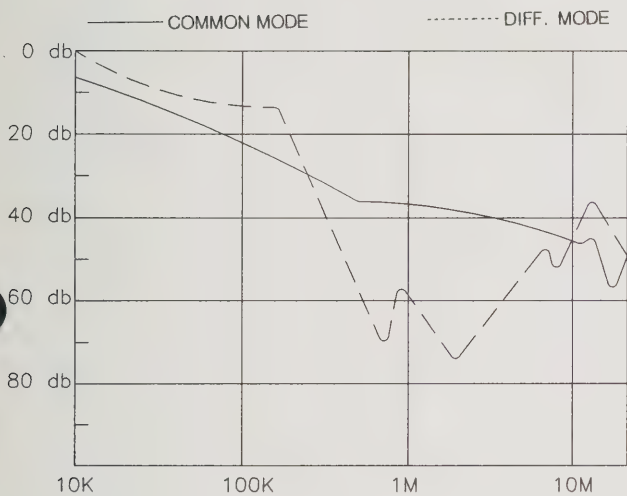




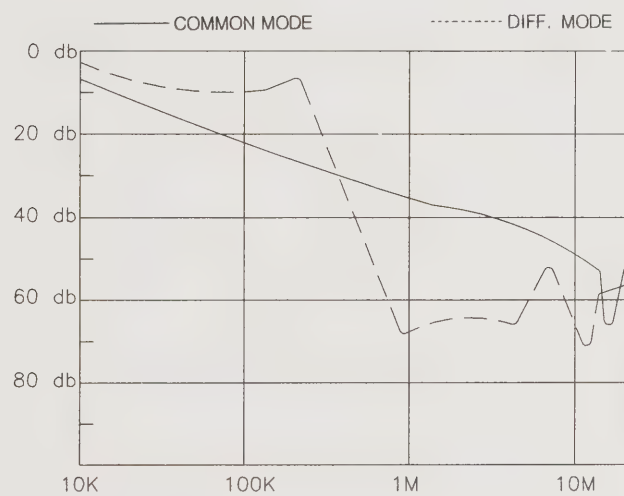
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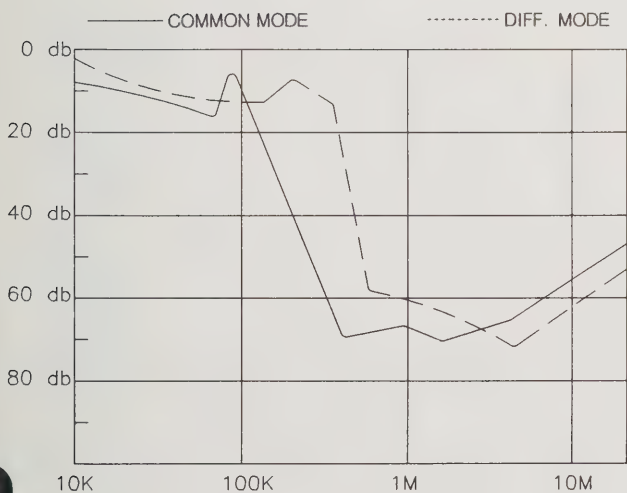
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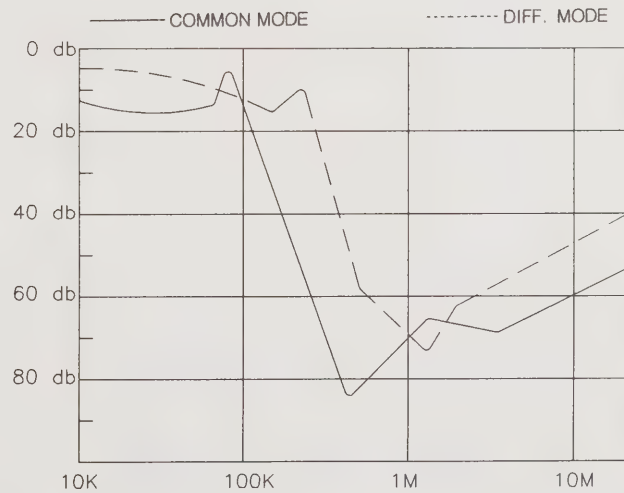
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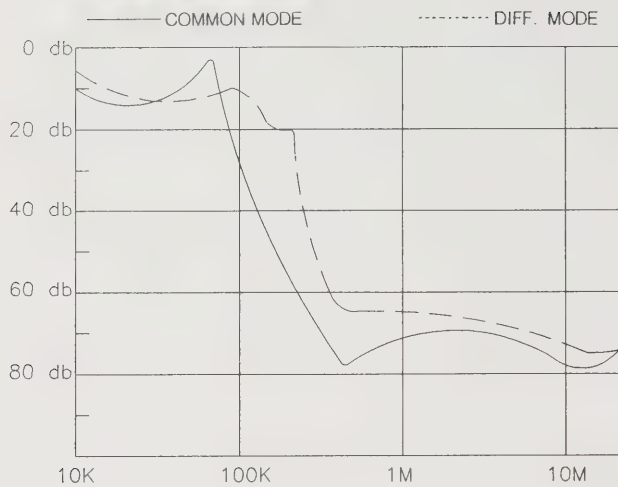
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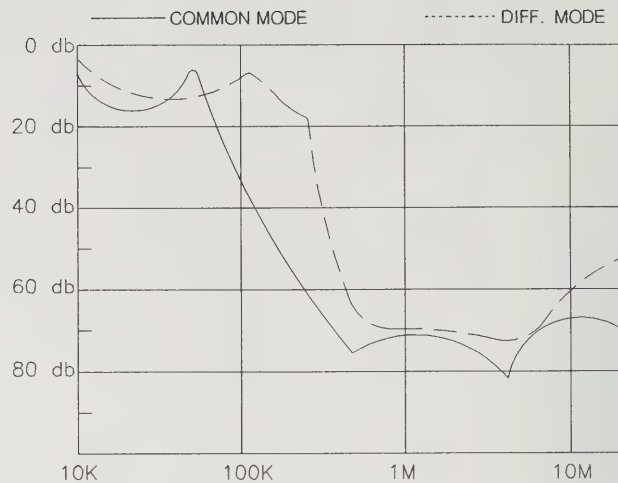
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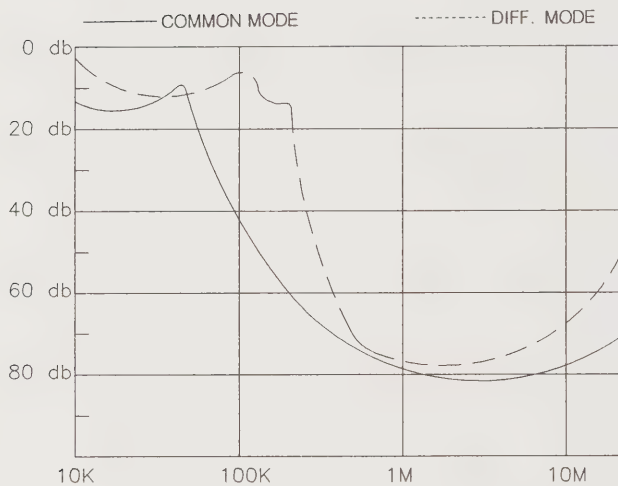
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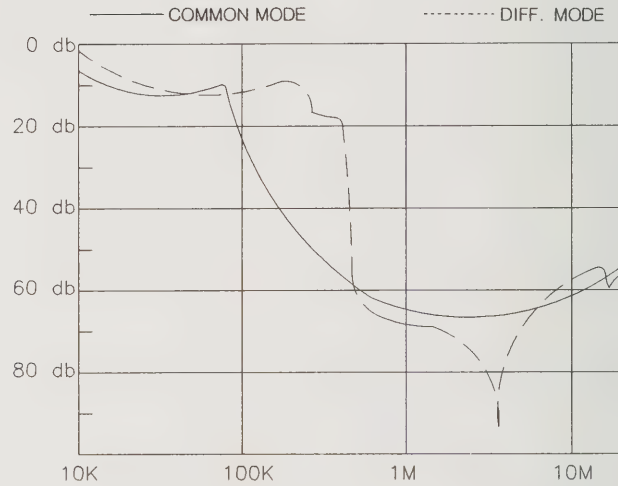
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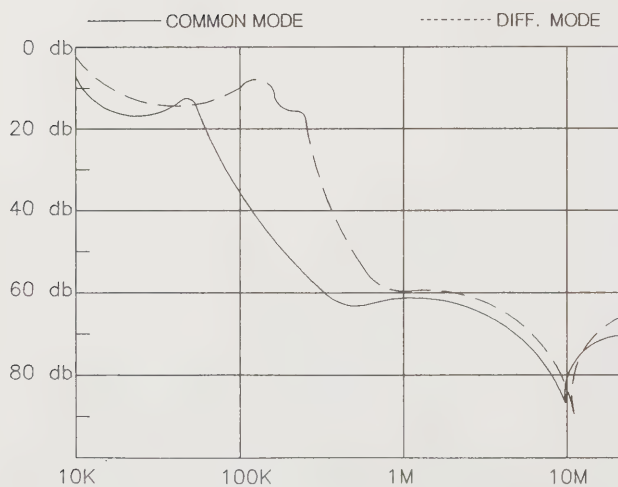
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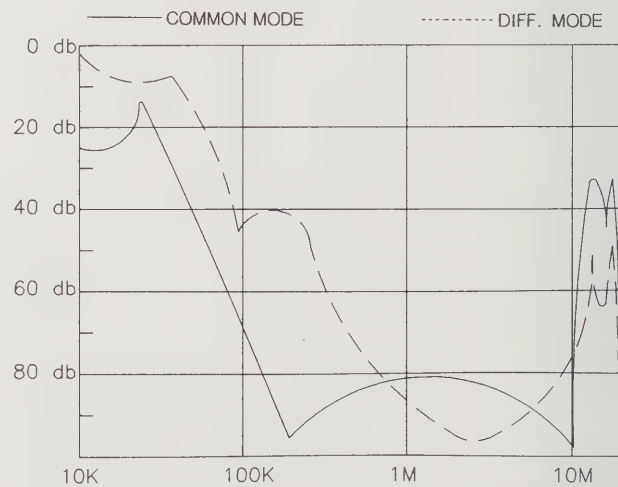
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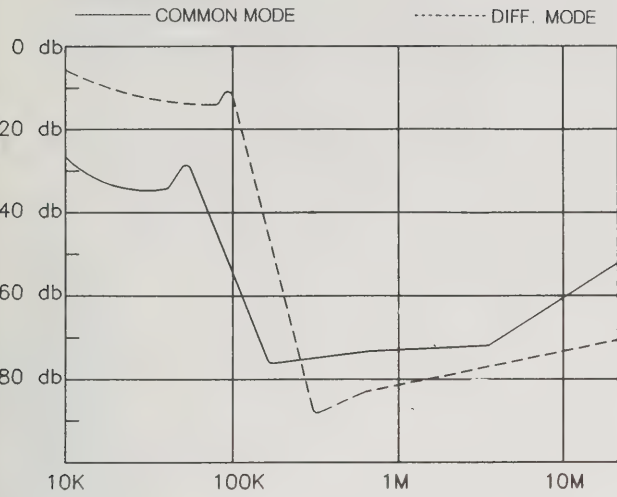
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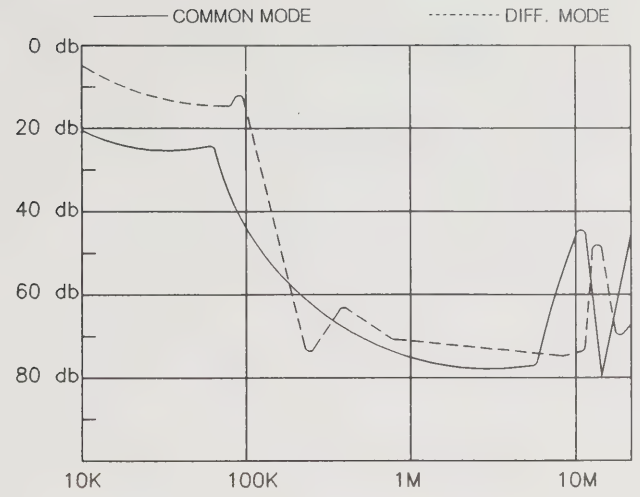
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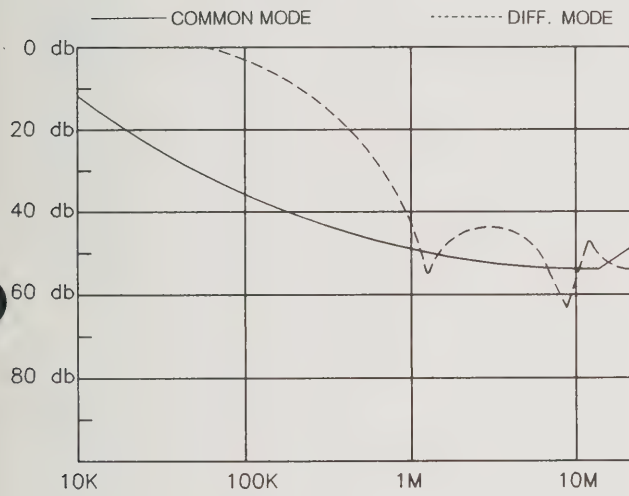
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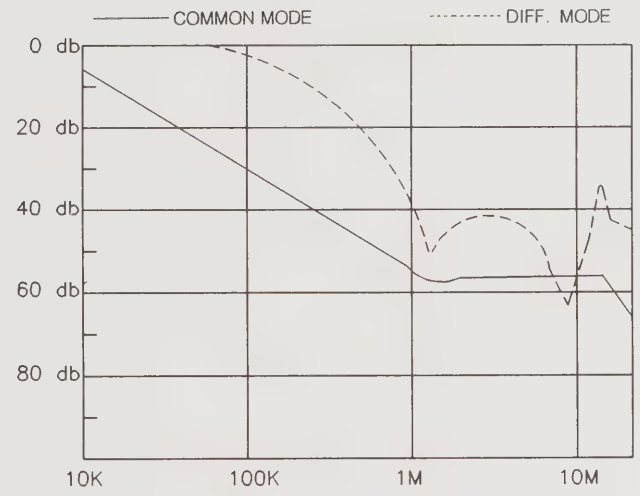
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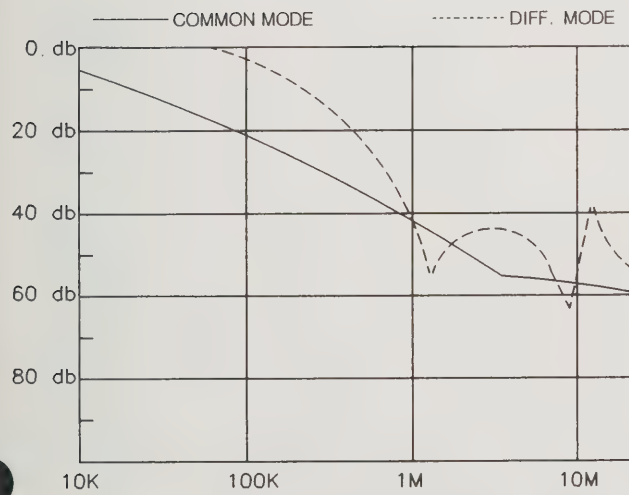
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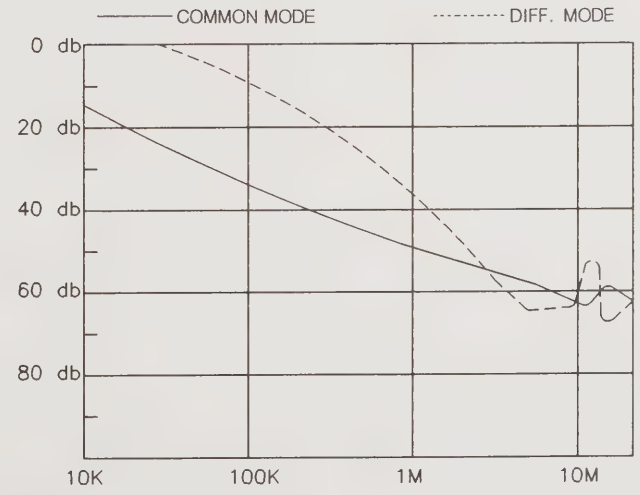
O1ME3



O3ME3

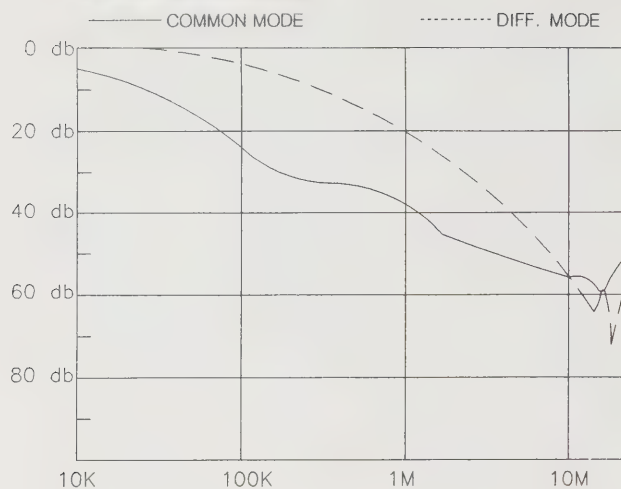


O6ME3

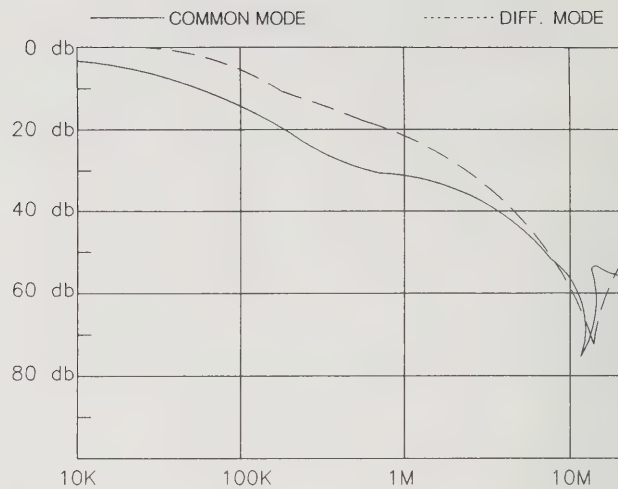


O2ME3G

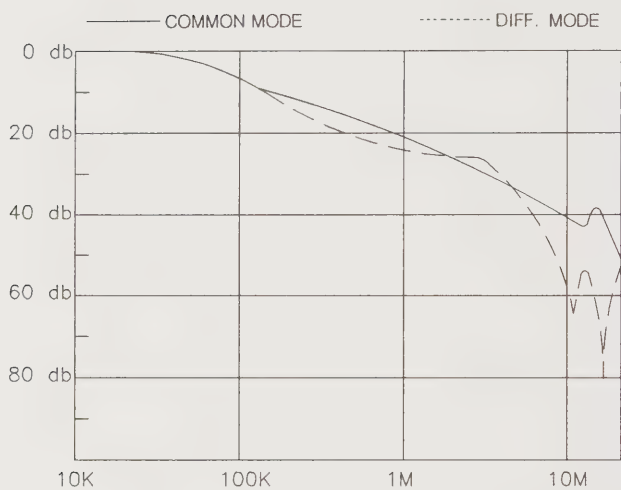




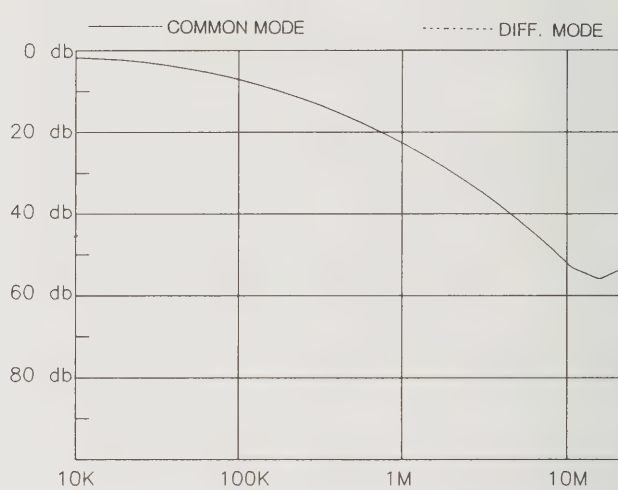
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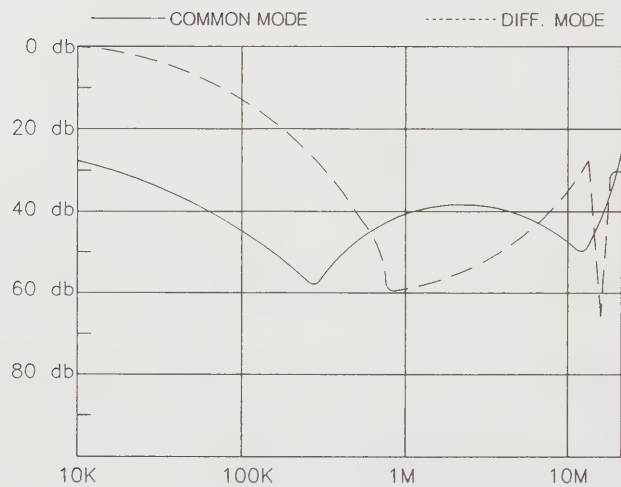
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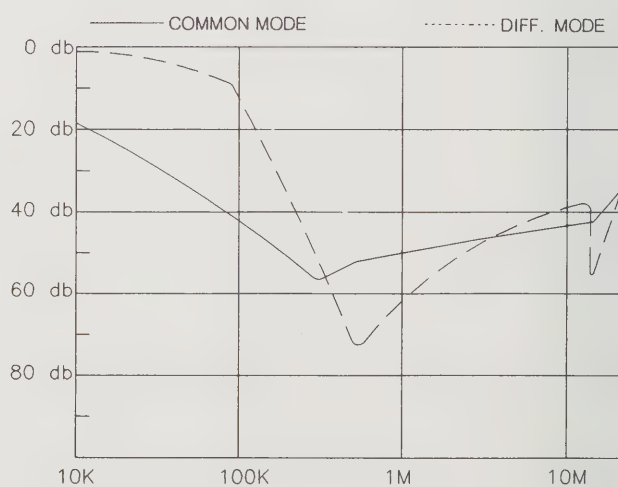
10ME3G



O6LE4



O1MK2



O2MK2











**DELTA ELECTRONIC IND. CO., LTD.**

9TH FL. ASIA ENTERPRISE CENTER  
144 MIN CHUAN EAST ROAD, SEC. 3  
TAIPEI, TAIWAN, R.O.C.  
TEL: (2)716-4822  
FAX: (2)716-9764  
TLX: 26524 DELTATRO

714-723 SOI E5, E.P.Z.  
BANGPOO INDUSTRIAL ESTATE  
KM. 37 SUKHUMVIT ROAD  
SUMUTPRAKARN 10280, THAILAND  
TEL: 011-662-324-0236  
FAX: 011-662-324-0243

**DELTA PRODUCTS CORPORATION, USA**

3225 LAUREL VIEW COURT  
FREMONT, CA 94538  
TEL: (510)770-0660  
FAX: (510)770-0122

EAST COAST OFFICE  
2000 AERIAL CENTER PARKWAY #114  
MORRISVILLE, NC 27560  
TEL: (919)380-8883  
FAX: (919)380-8383